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UNITED STATES DEPARTMENT OF COMMERCE

W. ALEXANDER HARRIMAN, Secretary

WEATHER BUREAU

E. W. Richardson, Chief

MONTHLY WEATHER REVIEW

OCTOBER 1947

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CHARTS I-XXI. (Chart VII, Showall, omitted until November.)



CORRECTION

MONTHLY WEATHER REVIEW, JUNE 1947, VOL. 75, NO. 6, p. 107. In table of *Geographical Data for June 1947*, under heading "Middle Pacific Coast," the temperature departure from normal for Red Bluff, Calif., should read -4°F ., instead of 4°F .

MONTHLY WEATHER REPORT

Acting Editor, Robert N. Culnan

VOL. 75, No. 10
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OCTOBER 1947

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR OCTOBER 1947

AEREOLOGICAL OBSERVATIONS

[For description of change in Table 1 and charts, see REVIEW, January 1948, p. 6]

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1947

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (1,009.9 mb.)			Albuquerque, N. Mex. (838.0 mb.)			Apalachicola, Fla. (1,015.5 mb.)			Atlanta, Ga. (983.6 mb.)			Auburn, Calif. (956.7 mb.)			Big Spring, Tex. (926.3 mb.)			Bismarck, N. Dak. (953.1 mb.)										
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity									
Surface	31	86	11.5	77	31	1,620	17.4	82	31	5	21.9	86	31	300	18.0	82	31	501	14.6	69	31	774	21.4	80	31	505	10.1	70	
1,000	31	167	12.8	73	31	75	(*)	81	31	139	21.8	82	31	157	(*)	81	31	123	(*)	31	102	(*)	31	99	(*)	31	136	10.1	70
900	31	606	13.2	64	31	534	(*)	81	31	585	19.4	76	31	601	18.3	75	31	562	15.5	67	31	566	(*)	31	534	8.7	67		
800	31	1,053	10.6	66	31	1,000	(*)	31	31	1,047	16.6	74	31	1,061	15.5	76	31	1,019	14.4	54	31	1,024	21.8	48	31	983	11.4	55	
700	31	1,528	8.0	66	31	1,497	(*)	31	31	1,532	14.0	69	31	1,544	12.5	75	31	1,499	11.5	50	31	1,518	18.7	50	31	1,459	9.7	53	
600	31	2,027	6.6	53	31	2,015	15.9	31	31	2,041	11.1	65	31	2,051	9.6	69	31	2,003	8.5	46	31	2,035	14.8	50	31	1,961	7.8	48	
500	31	2,559	4.1	49	31	2,562	11.7	36	31	2,584	8.2	57	31	2,591	7.0	61	31	2,539	5.5	44	31	2,581	10.9	49	31	2,495	5.7	47	
400	31	3,113	1.0	48	31	3,131	7.1	42	31	3,144	5.2	52	31	3,149	4.3	52	31	3,095	2.4	44	31	3,151	7.3	38	31	3,053	2.8	49	
300	31	3,712	-1.9	44	31	3,739	2.3	44	31	3,751	1.9	46	31	3,753	1.7	48	31	3,693	-4.4	42	31	3,760	3.2	37	31	3,551	-1.0	49	
200	31	4,338	-5.3	37	31	4,376	-2.3	45	31	4,388	-1.6	45	31	4,388	-2.8	40	31	4,327	-3.8	41	31	4,401	-1.1	32	31	4,283	-5.0	48	
175	31	5,019	-9.5	34	31	5,061	-7.1	46	31	5,077	-5.5	36	31	5,073	-6.9	33	31	5,008	-7.8	42	31	5,088	-5.4	46	31	4,963	-9.4	46	
150	31	5,745	-14.3	31	31	5,798	-11.7	41	31	5,817	-10.2	31	31	5,809	-11.8	31	31	5,745	-12.2	44	31	5,831	-10.1	29	31	5,602	-14.5	46	
125	31	6,544	-20.1	31	31	6,606	-17.3	42	31	6,627	-15.6	31	31	6,614	-17.1	31	31	6,550	-17.8	46	31	6,644	-15.6	29	31	6,496	-20.0	46	
100	31	7,399	-26.8	31	31	7,470	-23.5	29	31	7,495	-22.0	31	31	7,482	-23.5	31	31	7,412	-24.3	54	31	7,515	-21.9	29	31	7,345	-26.2	46	
80	31	8,348	-34.2	31	31	8,432	-30.7	29	31	8,464	-28.8	31	31	8,444	-31.0	31	31	8,370	-31.6	50	31	8,483	-29.3	29	31	8,295	-33.4	46	
60	31	9,408	-42.4	31	31	9,508	-39.0	29	31	9,550	-36.5	30	31	9,521	-39.2	30	31	9,441	-39.6	56	31	9,565	-37.6	27	31	9,364	-41.6	46	
50	30	10,616	-51.2	30	30	10,731	-47.6	29	30	10,789	-44.9	29	30	10,748	-47.9	30	30	10,663	-48.7	29	30	10,798	-46.4	20	30	10,574	-50.5	46	
25	26	12,066	-57.9	30	30	12,180	-54.6	28	26	12,251	-53.8	29	26	12,195	-55.0	26	25	12,109	-58.7	29	26	12,253	-54.1	9	26	12,009	-57.2	46	
175	17	21,865	-59.1	28	28	13,036	-57.6	26	26	13,105	-58.8	25	25	13,040	-58.3	27	26	12,966	-58.8	28	28	13,096	-58.0	26	26	12,996	-57.0	46	
125	12	13,858	-59.4	22	22	14,011	-60.7	25	25	14,061	-63.9	18	18	14,002	-61.9	15	13	13,875	-61.0	25	15	14,053	-61.3	26	26	14,096	-59.4	46	
100	8	15,147	-63.0	12	12	15,190	-67.3	12	12	15,117	-55.1	12	12	15,181	-55.1	15	15	15,185	-65.2	15	15	15,185	-65.2	26	26	15,100	-62.2	46	

	Boise, Idaho (914.0 mb.)	Brownsville, Tex. (1,013.1 mb.)	Buffalo, N. Y. (903.9 mb.)	Caribou, Maine (994.6 mb.)	Charleston, S. C. (1,015.9 mb.)	Ciudad Victoria, Mexico (974.6 mb.)	Columbia, Mo. (988.3 mb.)																								
Surface	31	868	13.1	58	31	6	24.3	82	31	221	13.1	74	31	191	7.3	77	31	13	10.3	91	29	335	24.8	76	31	230	17.7	70			
1,000	31	100	(*)	31	31	120	24.6	79	31	169	(*)	31	31	145	(*)	31	31	149	20.3	85	29	31	106	(*)	31	136	(*)	31	136	(*)	62
900	31	545	(*)	31	31	575	21.9	75	31	605	14.6	62	31	582	8.7	67	31	594	18.4	78	29	560	23.5	74	31	552	18.7	62			
800	31	998	14.8	47	31	1,038	19.4	64	31	1,058	12.2	60	31	1,016	6.7	67	31	1,054	15.6	76	29	1,030	20.1	70	31	1,041	16.3	61			
700	31	1,480	12.1	46	31	1,529	17.1	55	31	1,535	10.1	53	31	1,483	4.2	65	31	1,538	12.7	74	29	1,521	16.7	77	31	1,526	13.7	60			
600	31	1,984	8.5	50	31	2,044	14.7	44	31	2,037	8.0	46	31	1,974	2.1	59	31	2,045	10.1	68	29	2,036	13.8	73	31	2,035	11.3	51			
500	31	2,517	4.8	56	31	2,594	11.9	41	31	2,572	5.5	44	31	2,498	2.2	58	31	2,584	7.6	61	29	2,584	10.9	66	31	2,575	8.4	47			
400	31	3,073	.9	63	31	3,161	8.1	46	31	3,128	2.8	39	31	3,045	-2.1	53	31	3,146	4.4	54	29	3,151	7.9	61	31	3,138	4.0	44			
300	31	3,666	-2.9	62	31	3,775	4.5	43	31	3,728	-6.6	39	31	3,633	-5.3	46	31	3,746	1.1	47	29	3,762	4.1	64	30	3,745	-1.6	39			
200	31	4,296	-6.5	63	31	4,417	1.0	34	31	4,359	-4.5	35	31	4,256	-8.8	44	30	4,386	-2.3	43	29	4,406	-2.2	61	30	4,382	-2.3	38			
175	31	4,970	-10.2	57	31	5,113	-3.0	30	31	5,040	-8.5	31	31	4,924	-12.9	42	30	5,070	-6.6	45	29	5,102	-3.1	52	30	5,067	-5.9	39			
150	30	5,702	-14.3	52	30	5,861	-7.6	30	30	5,770	-13.4	31	31	5,644	-17.5	30	30	5,811	-11.4	30	28	5,847	-7.6	43	30	5,804	-11.7	38			
125	30	6,496	-19.8	58	30	6,686	-12.7	30	30	6,573	-19.2	31	31	6,431	-22.3	30	29	6,621	-17.1	30	27	6,670	-13.0	30	30	6,612	-17.4	38			
100	30	7,357	-26.0	52	30	7,561	-18.9	30	30	7,428	-25.9	28	28	7,276	-																

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1947—Continued

Standard pressure surface (mb.)	Dodge City, Kans. (924.1 mb.)				El Paso, Tex. (880.8 mb.)				Ely, Nev. (808.5 mb.)				Fort Worth, Tex. (990.3 mb.)				Glasgow, Mont. (936.1 mb.)				Grand Junction, Colo. (852.5 mb.)				Great Falls, Mont. (884.0 mb.)				
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	
Surface	31	787	17.4	53	30	1,195	20.5	27	31	1,908	9.5	51	31	211	22.4	64	31	648	10.4	60	31	1,474	13.4	57	31	1,128	10.4	53	
1,000	31	102	(*)	—	30	78	(*)	—	31	96	(*)	—	31	125	(*)	—	31	90	(*)	—	31	101	(*)	—	31	84	(*)	—	
950	31	549	(*)	—	30	539	(*)	—	31	543	(*)	—	31	580	22.8	56	31	527	(*)	—	31	553	(*)	—	31	529	(*)	—	
900	31	1,013	18.8	50	30	1,013	(*)	—	31	1,005	(*)	—	31	1,043	19.6	57	31	976	12.8	49	31	1,015	(*)	—	31	984	(*)	—	
850	31	1,502	16.1	50	30	1,504	21.2	26	31	1,487	(*)	—	31	1,553	15.8	60	31	1,454	10.2	49	31	1,498	(*)	—	31	1,454	10.1	50	
800	31	2,015	13.2	49	30	2,024	17.0	27	31	1,997	11.5	48	31	2,045	12.5	58	31	1,956	7.4	51	31	2,010	12.3	50	31	1,955	6.8	51	
750	31	2,557	9.8	47	30	2,574	12.5	31	31	2,536	8.7	46	31	2,592	9.1	53	31	2,488	4.7	48	31	2,552	8.5	52	31	2,488	3.9	53	
700	31	3,124	5.6	48	30	3,143	7.9	36	31	3,100	4.2	50	31	3,152	6.1	39	31	3,044	1.5	49	31	3,114	4.2	56	31	3,040	0.6	51	
650	31	3,727	1.0	49	30	3,752	3.5	36	31	3,698	-1.1	53	31	3,758	2.2	32	31	3,641	-1.9	52	31	3,715	-1.1	57	31	3,636	-3.1	50	
600	30	4,367	-3.3	42	30	4,394	-1.1	34	31	4,335	-4.1	53	31	4,396	-1.5	—	30	4,272	-5.5	53	31	4,349	-4.5	56	31	4,261	-6.7	49	
550	30	5,050	-7.5	37	30	5,083	-5.5	31	31	5,015	-7.7	48	31	5,087	-6.0	—	30	4,949	-9.8	48	31	5,031	-9.0	55	31	4,938	-11.0	41	
500	30	5,784	-12.6	36	30	5,823	-10.6	30	30	5,753	-11.9	40	31	5,825	-11.1	—	30	5,679	-14.8	47	31	5,761	-13.6	51	31	5,660	-15.9	46	
450	30	6,584	-18.4	34	30	6,630	-16.3	30	30	6,557	-17.6	41	31	6,637	-16.9	—	30	6,475	-20.0	47	31	6,560	-19.3	48	31	6,453	-21.6	46	
400	30	7,449	-24.9	32	29	7,497	-23.2	30	30	7,422	-24.4	31	31	7,501	-23.4	—	29	7,335	-25.9	31	7,418	-25.7	—	31	7,303	-27.8	—		
350	30	8,406	-31.8	31	29	8,459	-30.8	30	30	8,381	-31.9	31	31	8,463	-31.1	—	28	8,292	-32.7	29	8,375	-32.9	—	31	8,248	-35.0	—		
300	30	9,478	-39.7	30	28	9,532	-39.4	29	30	9,449	-40.2	31	31	9,536	-39.6	—	27	9,364	-40.8	29	9,440	-41.3	—	31	9,305	-43.0	—		
250	28	10,705	-48.3	28	24	10,765	-48.5	26	26	10,673	-48.8	31	31	10,759	-48.3	—	26	10,577	-49.2	25	10,656	-49.3	—	30	10,516	-50.8	—		
200	22	12,170	-55.0	22	22	12,214	-56.4	22	22	12,094	-56.0	31	31	12,202	-56.0	—	25	12,013	-55.1	14	12,054	-54.8	—	24	11,972	-56.9	—		
175	12	12,984	-56.8	21	21	13,056	-60.1	20	20	12,954	-58.6	27	31	13,049	-59.6	—	22	12,859	-56.1	6	12,893	-54.0	—	19	12,833	-58.1	—		
150	8	13,950	-58.6	16	14	14,021	-64.5	13	13	13,893	-60.2	19	13	13,995	-63.8	—	16	13,829	-56.0	10	13,893	-54.0	—	10	13,804	-59.4	—		
125	—	—	—	7	15,132	-60.0	5	15,022	-62.0	—	10	15,118	-67.5	—	9	14,971	-57.2	—	—	—	—	—	—	—	—	—	—	—	—
Surface	31	273	15.0	87	31	3	20.4	86	—	31	3	27.3	63	31	172	14.3	83	31	360	9.9	73	31	178	14.0	81				
1,000	31	175	(*)	—	31	161	20.3	79	—	31	138	22.9	65	31	163	(*)	—	31	133	(*)	—	31	148	(*)	—				
950	31	614	15.9	76	31	608	17.7	74	—	31	589	22.1	71	31	607	16.8	65	31	560	10.9	66	31	590	16.5	68				
900	31	1,071	13.7	75	31	1,064	15.0	69	—	31	1,056	18.5	76	31	1,060	14.1	64	31	1,013	9.7	63	31	1,045	14.1	63				
850	31	1,551	11.0	73	31	1,547	12.4	65	—	31	1,544	15.8	67	31	1,541	11.2	65	31	1,486	8.4	54	31	1,526	12.4	52				
800	31	2,055	8.3	65	31	2,053	9.8	59	—	31	2,058	14.2	47	31	2,044	8.3	65	31	1,986	6.6	49	31	2,032	9.8	52				
750	31	2,592	5.3	61	31	2,591	7.6	46	—	31	2,603	12.5	32	31	2,579	5.6	63	31	2,518	4.7	47	31	2,568	6.8	52				
700	31	3,147	2.7	54	31	3,152	4.4	43	—	30	3,178	9.6	26	31	3,137	2.5	61	31	3,075	2.3	44	31	3,129	3.7	48				
650	31	3,744	-7.7	52	31	3,749	-4.4	42	—	30	3,791	6.0	—	31	3,735	-7.7	59	31	3,667	-1.2	44	31	3,731	-4.4	43				
600	31	4,379	-4.3	50	31	4,388	-3.0	42	—	30	4,439	2.1	—	31	4,368	-4.3	58	31	4,303	-5.1	48	31	4,365	-3.5	37				
550	31	5,061	-8.2	45	31	5,072	-6.9	—	30	5,138	-2.2	—	31	5,048	-8.4	50	31	4,978	-9.3	46	31	5,048	-7.9	41					
500	31	5,794	-13.0	43	31	5,809	-11.6	—	30	5,886	-7.1	—	31	5,782	-13.4	42	30	5,712	-14.1	43	31	5,781	-12.9	45					
450	31	6,697	-18.4	43	31	6,618	-17.3	—	30	6,709	-12.6	—	31	6,580	-19.1	43	30	6,508	-19.5	47	31	6,583	-18.5	45					
400	31	7,459	-25.0	43	31	7,482	-23.3	—	30	7,590	-18.6	—	30	7,438	-25.6	—	28	7,360	-26.0	—	31	7,445	-24.9	—					
350	31	8,415	-32.5	40	30	8,442	-30.7	—	30	8,442	-30.7	—	29	8,572	-25.9	—	30	8,392	-33.2	—	31	8,401	-32.1	—					
300	30	9,484	-40.8	39	30	9,516	-39.1	—	29	9,669	-34.3	—	29	9,463	-41.4	—	26	9,382	-41.5	—	29	9,495	-40.1	—					
250	28	10,702	-49.8	30	30	10,740	-48.3	—	27	10,921	-43.3	—	29	10,676	-50.5	—	25	10,591	-50.7	—	25	10,715	-49.1	—					
200	23	12,131	-56.7	23	23	12,176	-55.7	—	26	12,391	-53.3	—	26	12,105	-57.3	—	21	12,024	-57.1	—	22	12,155	-57.4	—					
175	18	12,972	-59.3	15	13,015	-58.4	—	23	13,240	-58.6	—	26	12,949	-59.5	—	17	12,858	-58.5	—	19	13,006	-59.1	—						
150	10	13,917	-62.6	8	13,992	-61.1	—	15	14,214	-62.7	—	23	13,905	-61.7	—	6	13,807	-57.7	—	13	13,951	-60.3	—						
125	10	16,465	-71.2	7	16,350	-66.0	—	10	15,118	-66.0	—	10	15,																

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1947—Continued

Standard pressure surface (mb.)	Miami, Fla. (1,014.3 mb.)			Nantucket, Mass. (1,019.0 mb.)			Nashville, Tenn. (996.6 mb.)			New Orleans, La. (1,015.5 mb.)			North Platte, Nebr. (916.2 mb.)			Oakland, Calif. (1,014.4 mb.)			Ogden, Utah (863.9 mb.)									
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity								
		Dynamic height	Temperature	Relative humidity		Dynamic height	Temperature	Relative humidity		Dynamic height	Temperature	Relative humidity		Dynamic height	Temperature	Relative humidity		Dynamic height	Temperature	Relative humidity								
Surface	31	4	24.2	84	31	14	12.3	88	30	180	18.8	74	31	2	22.7	82	31	849	18.1	68	30	6	16.6	76	31	1,355	12.1	50
1,000	31	128	23.9	83	31	172	13.8	80	30	150	(*)	—	31	136	23.2	76	31	99	(*)	—	30	128	16.1	75	31	103	(*)	—
950	31	579	21.1	83	31	609	12.9	60	30	594	18.4	68	31	585	20.7	70	31	544	(*)	—	30	570	14.7	69	31	552	(*)	—
900	31	1,043	18.3	78	31	1,058	11.3	48	30	1,054	15.3	70	31	1,048	17.3	71	31	999	16.4	58	30	1,021	13.0	55	31	1,014	(*)	—
850	31	1,532	15.3	78	31	1,533	9.3	41	30	1,537	12.5	67	31	1,534	13.9	70	31	1,485	14.6	53	30	1,501	12.1	44	31	1,491	13.8	46
800	31	2,044	12.4	75	31	2,034	7.3	41	30	2,043	9.6	64	31	2,043	11.1	61	31	1,995	11.6	54	30	2,006	9.8	40	31	2,000	10.8	48
750	31	2,584	9.5	68	31	2,567	5.2	34	30	2,579	6.7	62	31	2,580	8.7	52	31	2,536	8.1	55	30	2,547	7.1	39	31	2,539	6.8	53
700	31	3,153	6.5	60	31	3,123	2.2	34	30	3,141	3.6	59	31	3,147	5.8	42	31	3,098	4.6	51	30	3,105	4.4	41	31	3,097	2.8	56
650	31	3,756	3.1	61	30	3,719	—9	34	29	3,743	2.5	54	31	3,750	2.2	—	31	3,701	—6	49	30	3,707	1.4	36	31	3,696	—1.1	56
600	30	4,403	—3	55	30	4,351	—4.6	—	28	4,378	—3.3	45	30	4,393	—1.4	—	31	4,335	—4.0	50	30	4,346	—2.1	38	31	4,327	—5.2	57
550	29	5,063	—4.0	61	30	5,020	—8.8	—	27	5,066	—7.1	—	30	5,079	—5.5	—	30	5,016	—8.6	48	30	5,033	—6.3	43	31	5,009	—9.5	57
500	29	5,842	—8.3	60	30	5,761	—13.9	—	27	5,802	—11.7	—	30	5,825	—10.2	—	30	5,745	—13.7	49	30	5,772	—10.9	45	31	5,756	—14.1	52
450	29	6,659	—13.4	45	29	6,568	—19.5	—	26	6,607	—17.4	—	29	6,638	—15.7	—	30	6,544	—19.5	45	30	6,585	—16.2	49	31	6,553	—19.8	52
400	29	7,540	—19.3	57	29	7,423	—26.1	—	25	7,474	—23.8	—	29	7,507	—22.1	—	30	7,401	—26.3	—	30	7,451	—22.6	—	31	7,391	—26.0	—
350	29	8,519	—26.0	50	29	8,375	—33.5	—	24	8,438	—31.1	—	29	8,475	—28.8	—	30	8,352	—33.4	—	29	8,419	—29.8	—	31	8,342	—33.6	—
300	28	9,614	—34.4	27	29	9,447	—41.2	—	24	9,512	—39.2	—	29	9,561	—36.5	—	30	9,416	—40.9	—	28	9,497	—38.1	—	31	9,406	—41.7	—
250	25	10,866	—43.7	23	25	10,622	—50.5	—	23	10,732	—46.6	—	28	10,801	—45.3	—	30	10,632	—49.5	—	25	10,725	—47.2	—	31	10,618	—50.2	—
200	17	12,330	—54.0	17	12,170	—55.9	—	22	12,170	—55.9	—	24	12,257	—48.4	—	30	12,071	—55.8	—	29	12,062	—55.5	—	30	12,062	—55.5	—	
175	10	13,155	—59.9	—	20	13,012	—58.6	—	17	13,107	—60.0	—	29	12,924	—57.5	—	—	—	—	—	28	12,901	—58.5	—	—	—	—	—
150	—	—	—	—	15	13,980	—61.4	—	13	14,051	—65.0	—	27	13,904	—60.6	—	—	—	—	—	19	13,875	—60.5	—	—	—	—	—
125	—	—	—	—	15	15,069	—62.5	—	7	15,131	—69.0	—	16	15,067	—64.2	—	—	—	—	—	16	15,014	—63.1	—	—	—	—	—
100	—	—	—	—	5	16,452	—65.8	—	—	—	—	—	7	16,451	—66.2	—	—	—	—	—	—	—	—	—	—	—	—	
Oklahoma City, Okla. (969.3 mb.)	Oklahoma City, Okla. (969.3 mb.)			Omaha, Nebr. (978.6 mb.)			Phoenix, Ariz. (971.5 mb.)			Pittsburgh, Pa. (975.5 mb.)			Portland, Maine (1,016.8 mb.)			Rapid City, S. Dak. (901.1 mb.)			St. Cloud, Minn. (977.2 mb.)									
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity								
		Dynamic height	Temperature	Relative humidity		Dynamic height	Temperature	Relative humidity		Dynamic height	Temperature	Relative humidity		Dynamic height	Temperature	Relative humidity		Dynamic height	Temperature	Relative humidity								
Surface	30	391	19.6	69	30	308	17.5	68	31	330	22.5	40	31	382	15.4	66	31	20	10.3	73	31	980	10.8	61	31	317	12.7	71
1,000	30	118	(*)	—	30	120	(*)	—	31	84	(*)	—	31	169	(*)	—	31	159	13.3	65	31	91	(*)	—	31	120	13.5	32
950	30	567	21.3	61	30	563	18.1	61	31	539	25.9	29	31	614	15.6	63	31	596	13.0	54	31	533	(*)	—	31	561	13.5	32
900	30	1,032	18.9	61	30	1,023	16.5	57	31	1,008	22.4	29	31	1,065	14.2	61	31	1,044	10.5	56	31	961	(*)	—	31	1,007	12.0	60
850	30	1,520	15.3	64	30	1,508	14.1	54	31	1,501	18.3	32	31	1,545	11.2	60	31	1,518	8.0	57	31	1,471	13.5	45	31	1,486	11.0	55
800	30	2,031	11.9	61	30	2,017	11.4	54	31	2,017	14.1	37	31	2,049	8.6	54	31	2,017	6.2	56	31	1,978	10.3	48	31	1,990	9.5	50
750	30	2,572	9.1	50	30	2,557	8.1	54	31	2,561	10.1	40	31	2,589	5.6	52	31	2,548	3.9	50	31	2,519	7.5	47	31	2,529	7.0	48
700	30	3,137	5.5	46	30	3,120	4.5	51	31	3,127	6.4	41	31	3,141	2.8	44	31	3,101	—9	47	31	3,077	4.1	49	31	3,088	3.9	46
650	30	3,739	1.7	41	30	3,721	—7	51	31	3,735	2.9	36	31	3,745	—4	43	31	3,695	—2.3	47	31	3,679	—5.4	48	31	3,691	—3.4	48
600	30	4,380	—2.1	36	30	4,358	—3.6	47	31	4,375	—1.2	31	31	4,374	—3.4	38	30	4,326	—5.9	44	31	4,314	—3.8	50	31	4,324	—4.0	50
550	30	5,065	—6.8	37	29	5,046	—8.2	44	31	5,064	—5.7	32	31	5,061	—8.1	—	30	5,001	—10.0	40	31	4,907	—8.5	51	31	5,007	—8.5	46
500	30	6,605	—17.5	28	6,581	—19.0	—	31	6,612	—17.0	36	31	6,593	—18.8	—	30	6,525	—20.2	—	27	6,524	—19.5	45	28	6,540	—18.8	—	
450	29	7,471	—23.8	28	7,439	—25.8	—	28	7,478	—23.9	40	31	7,450	—25.4	—	29	7,378	—26.9	—	27	7,384	—23.7	—	28	7,401	—23.1	—	
350	27	8,444	—30.7																									

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1947—Continued

Standard pressure surface (mb.)	Tampa, Fla. (1,014.6 mb.)			Tatoosh Island, Wash. (1,006.4 mb.)			Toledo, Ohio (996.2 mb.)			Washington, D. C. (1,018.5 mb.)		
	Number of obser- vations	Dynamic height	Temperature	Relative humidity	Number of obser- vations	Dynamic height	Temperature	Relative humidity	Number of obser- vations	Dynamic height	Temperature	Relative humidity
Surface	31	9	22.1	88	31	31	10.9	87	31	101	13.8	82
1,000	31	135	22.0	86	31	84	(*)	31	158	(*)	31	25
920	31	585	20.0	78	31	515	8.4	31	600	15.4	66	181
900	31	1,046	17.1	76	31	956	5.8	31	1,051	13.2	64	621
880	31	1,532	14.2	74	31	1,422	3.1	31	1,531	11.1	58	15.7
860	31	2,042	11.3	71	31	1,911	6	31	2,035	8.7	53	11.1
840	31	2,587	8.3	68	31	2,431	-1.9	31	2,573	5.9	49	8.4
820	31	3,146	5.2	62	31	2,973	-4.7	31	3,128	2.8	46	5.4
800	31	3,751	1.8	55	30	3,561	-7.9	31	3,728	-5	43	4.4
780	29	4,394	-1.6	45	30	4,172	-11.2	63	4,360	-4.2	53	30
760	29	5,084	-5.2	34	30	4,840	-14.8	59	5,042	-8.2	33	-8.4
740	29	5,825	-9.4	30	5,532	-18.9	62	31	5,774	-13.4	30	-13.3
720	29	6,640	-14.8	30	6,335	-23.7	58	31	6,573	-19.2	30	-18.8
700	29	7,513	-20.9	30	7,182	-29.1	58	30	7,433	-25.9	30	-25.4
680	29	8,487	-27.4	29	8,125	-35.4	30	8,385	-33.3	30	-32.9	
660	29	9,575	-35.3	29	9,183	-42.1	29	9,446	-41.4	30	-41.0	
640	29	10,824	-43.9	27	10,405	-48.6	27	10,661	-50.3	30	-50.1	
620	28	12,288	-54.3	22	11,854	-52.3	17	12,063	-57.3	28	-56.5	
600	27	13,132	-60.0	14	12,672	-52.5	15	12,920	-59.7	26	-59.1	
580	23	14,074	-65.1	5	13,506	-51.2	12	13,870	-61.5	23	-61.2	
560	16	15,170	-69.7	—	—	—	—	6	14,996	-64.1	14	-62.7
540	7	16,475	-73.9	—	—	—	—	—	—	—	—	—

¹ Data not yet received.

* Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T., except at Ciudad Victoria, Mazatlan, and Merida, where they are taken near 0200, G. C. T.

"Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces

of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below -20° C.

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level.

TABLE 2.—Free-air resultant winds based on pilot balloon observations made near 5 p. m., E. S. T. (2200 G. C. T.) during October 1947. Directions given in degrees from north ($N=360^\circ$, $E=90^\circ$, $S=180^\circ$, $W=270^\circ$). Velocities in meters per second

	Ely, Nev. (1,910 m.)	Grand Junction, Colo. (1,475 m.)	Greensboro, N. C. (271 m.)	Havre, Mont. (767 m.)	Jackson- ville, Fla. (16 m.)	Joliet, Ill. (178 m.)	Las Vegas, Nev. (573 m.)	Little Rock, Ark. (88 m.)	Medford, Oreg. (416 m.)	Miami, Fla. (12 m.)	Mobile, Ala. (66 m.)	Nashville, Tenn. (194 m.)	New York, N. Y. (15 m.)
surface.....	31 217 2.1	30 283 1.1	26 65 2.1	20 250 2.0	29 45 2.3	30 180 1.9	31 180 0.8	31 112 1.2	30 246 0.7	30 111 2.5	29 95 1.0	30 80 0.3	31 183 1.1
500	—	—	26 77 2.1	20 251 4.2	29 66 2.7	30 160 2.7	—	—	31 108 1.1	30 246 8	30 94 3.8	29 65 1.0	30 70 9
1,000	—	—	25 103 1.9	20 251 4.2	29 119 1.0	28 185 3.2	31 174 1.6	30 122 7	30 222 2.0	29 97 3.0	28 45 1.4	30 105 8	31 241 2.4
1,500	—	—	25 116 1.5	21 251 6.1	29 176 9	27 201 2.8	31 203 1.1	29 241 8	30 216 4.6	29 127 1.9	27 10 2.0	29 130 1.4	26 265 4.2
2,000	31 219 2.1	30 288 2.0	21 121 8	28 250 8.3	22 232 1.6	25 220 3.5	31 219 2.7	29 262 8	27 217 6.9	28 190 1.4	22 354 2.9	28 222 1.4	31 301 2.4
2,500	31 219 2.7	30 259 2.4	19 20 1.0	26 253 10.1	21 263 3.2	24 244 2.9	30 223 3.8	24 85 4.4	22 224 5.1	27 222 2.4	17 343 2.6	25 284 4.7	27 300 4.4
3,000	31 225 3.2	28 234 3.6	17 348 1.2	23 259 11.2	20 266 3.5	23 243 2.5	30 241 4.7	22 306 2.8	18 230 9.1	26 223 3.5	15 326 2.1	21 332 2.7	22 279 4.2
4,000	30 244 4.7	28 258 5.3	14 341 2.0	16 267 12.1	18 267 4.5	19 259 4.3	29 244 5.0	17 321 1.8	13 260 7.4	17 233 6.5	12 260 6.0	14 335 3.7	19 262 4.1
5,000	24 246 8.0	26 259 5.5	12 310 3.4	12 263 13.6	15 266 5.5	14 256 2.7	27 257 6.6	14 341 2.6	10 257 11.1	14 236 7.3	—	10 312 3.6	10 285 4.1
6,000	23 263 8.7	23 274 6.4	11 322 2.4	—	15 256 9.3	13 247 4.5	28 271 8.0	14 332 3.4	—	11 253 10.3	—	—	—
8,000	19 272 9.8	20 291 8.7	—	—	13 246 14.3	—	22 289 12.7	—	—	—	—	—	—
10,000	11 324 7.5	17 285 8.7	—	—	—	—	20 281 13.8	—	—	—	—	—	—
12,000	—	—	13 304 10.9	—	—	—	13 274 11.8	—	—	—	—	—	—
14,000	—	—	—	—	—	—	10 268 12.0	—	—	—	—	—	—

	Oakland, Calif. (8 m.)	Oklahoma City, Okla. (396 m.)	Omaha, Nebr. (306 m.)	Phoenix, Ariz. (338 m.)	Rapid City, S. Dak. (982 m.)	St. Louis, Mo. (181 m.)	St. Cloud, Minn. (318 m.)	San An- tonio, Tex. (240 m.)	San Diego, Calif. (13 m.)	Sault Ste. Marie, Mich. (225 m.)	Seattle, Wash. (116 m.)	Spokane, Wash. (603 m.)	Washington, D. C. (24 m.)
Surface	30	263	3.5	30	190	4.6	29	170	2.3	31	194	0.7	30
500	30	283	2.9	30	187	5.4	29	171	4.1	31	221	1.3	30
1,000	29	285	2.1	30	186	5.8	27	188	6.5	31	211	1.6	30
1,500	25	250	2.1	29	189	6.0	27	205	7.6	30	248	1.9	26
2,000	25	241	3.2	26	201	5.2	27	221	9.4	31	210	2.6	20
2,500	24	250	3.0	26	215	4.3	27	229	10.3	30	219	2.8	22
3,000	24	266	4.6	26	233	4.4	25	234	10.8	29	245	3.2	26
4,000	21	277	5.3	22	268	4.2	25	241	10.2	28	253	3.9	24
5,000	23	277	7.5	19	287	4.2	20	242	7.7	26	262	6.5	21
6,000	23	282	10.3	16	264	6.6	19	239	7.9	25	264	7.1	20
8,000	14	276	7.6				15	267	7.2	23	276	10.6	18
10,000							12	257	7.7	15	253	9.2	
12,000							12	257	7.7	15	253	9.2	
14,000							12	264	8.2				
				11	268	10.7							

TABLE 3.—Maximum free-air wind velocities (m. p. s.) for different sections of the United States based on pilot balloon observations during October 1947

Section	Surface to 2,500 meters (m. s. l.)				2,501 to 5,000 meters (m. s. l.)				Above 5,000 meters (m. s. l.)							
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	
Northeast ¹ -----	39.0	wnw.	408	23	Caribou, Maine-----	55.4	nnw.	2,802	24	Caribou, Maine-----	67.9	s.	9,472	1	Caribou, Maine	
East-Central ¹ -----	29.5	ssw.	1,154	27	Louisville, Ky.-----	33.0	nnw.	3,200	29	Nashville, Tenn.-----	76.8	wws.	13,900	4	Raleigh, N. C.	
Southeast ¹ -----	35.0	ssw.	1,881	11	Key West, Fla.-----	26.5	ene.	3,150	6	Charleston, S. C.-----	55.0	wnw.	13,360	26	Charleston, S. C.	
North-Central ¹ -----	35.4	s.	1,010	11	Huron, S. Dak.-----	48.8	nnw.	4,610	23	International Falls, Minn.	80.8	wws.	14,492	7	Milwaukee, Wis.	
Central ¹ -----	36.5	sse.	1,509	15	Sioux City, Iowa-----	77.0	sw.	4,908	8	Lander, Wyo.-----	59.5	nw.	10,672	1	Indianapolis, Ind.	
South-Central ¹ -----	29.5	nnw.	1,370	31	Oklahoma City, Okla.	35.1	wnw.	4,893	31	Fort Worth, Tex.-----	59.0	wws.	13,434	25	Big Spring, Tex.	
Northwest ¹ -----	38.0	wws.	2,020	5	Spokane, Wash.-----	64.8	w.	4,936	2	Ellensburg, Wash.-----	81.5	sw.	10,313	20	Tatoosh Island, Wash.	
West-Central ¹ -----	31.0	wws.	2,500	16	Casper, Wyo.-----	54.3	ssw.	4,366	7	Reno, Nev.-----	78.0	wws.	9,700	8	Oakland, Calif.	
Southwest ¹ -----	28.3	ssw.	2,285	21	Las Vegas, Nev.-----	50.2	ssw.	3,645	21	Las Vegas, Nev.-----	69.0	wnw.	12,952	27	Raton, N. Mex.	

¹ Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.

¹ New Jersey, Pennsylvania, and northern Ohio.
² Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
³ South Carolina, Georgia, Florida, and Alabama.

Michigan, Wisconsin, Minnesota, North Dak.

¹ Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
² Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.

⁴ Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.

Montana, Idaho, Washington, and Oregon.

• Wyoming, Colorado, Utah, northern Nevada, and northern California.
• Southern California, southern Nevada, Arizona, New Mexico, and ex-

*Southern California, southern Nevada, Arizona, New Mexico, and extreme western Texas.

RIVER STAGES AND FLOODS FOR OCTOBER 1947

C. R. JORDAN

Precipitation during October was very irregular over the United States. Several areas of considerable size received more than twice the normal precipitation for October while other areas experienced severe drought. The eastern and southern parts of the country were particularly dry except for the southeastern corner. Precipitation was also deficient in the Great Lakes region, Montana, and eastern Idaho. Rainfall was much above normal in Florida, Georgia, and most of the Carolinas; in the Central Mississippi Valley; the Dakotas; and the Northwest, extending southeastward through Wyoming and Colorado.

Severe flood conditions prevailed over southern Florida, and flash floods occurred during the month on the Swannanoa River in North Carolina and at Galax, Va., on Chestnut Creek. Some light overflow was reported in northwestern Washington. Severe drought conditions prevailed in the northeastern States and also in the extreme Southwest.

Rains accompanying the hurricane of mid-September resulted in severe flooding in the southern part of Florida. Additional rain, ranging from 2 to 8 inches, during the remainder of September aggravated the flooding. Another hurricane crossed Florida on the night of October 11-12, preceded or accompanied by severe thunderstorms and heavy rainfall over southeast Florida and much of the Everglades. The U. S. Geological Survey reports that a recording rain gage operated by that agency in Hialeah showed 6 inches of rain in 75 minutes, a reading possibly exceeded at other places. Lake Okeechobee reached a stage of 18.7 feet on October 29, the highest stage since records were begun in 1915. The stage was well below the critical height of the levee, but the surface of the lake was several feet higher than surrounding land, which prevented any gravity drainage. Most of south Florida resembled a great lake. The Geological Survey reports that there were roughly 12,000,000 acre-feet of water on the Everglades, an amount comparable with the largest storage reservoirs in the country. Damage to crops and property was very high.

Heavy rains over a small area near Mount Mitchell, N. C., on the morning of the 17th caused a flash flood on the Swannanoa River. The total for the storm, spread over $2\frac{1}{2}$ days at Mount Mitchell, was 7.21 inches, with the heaviest rains occurring during the night of the 16th and 17th. Flood waters were mostly run-off from the

North Fork of the Swannanoa; run-off on the Bee Tree Fork was retained in the Asheville water supply dam. There was minor damage to homes and crops.

Another flash flood swept down narrow Chestnut Creek into Galax, Va., in the early morning of October 18, carried several houses in its wake, and forced several families to evacuate their homes. Furniture factories lost valuable stores of lumber; several factories were affected by water entering their boiler rooms; and the city's water supply pumping system was interrupted for a time. The water receded rapidly after reaching a crest.

Minor floods occurred in the Roanoke River Basin as a result of heavy rains on the eastern slopes of the mountains in North Carolina and southwestern Virginia, from October 8 to 12.

At Pueblo, Colo., an unseasonable rain and electric storm began at 7:26 p. m., October 7, flooding streets and basements and disrupting power service. The storm ended soon after midnight. Damage was relatively light.

Minor overflow was reported in northwestern Washington as a result of moderate to heavy rains over the area on the afternoon and evening of the 18th, following several days of light to moderate precipitation. The rises were rapid and the crests passed rapidly downstream.

FLOOD STAGE REPORT FOR OCTOBER 1947

[All dates in October unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest 1	
		From	To	Stage	Date
ATLANTIC SLOPE DRAINAGE					
Dan: Danville, Va.	Feet 11	10	11	Feet 14.0	11
Roanoke:					
Weldon, N. C.	31	13	14	33.6	13
Williamston, N. C.	10	1	6	11.1	4
Broad: Blairs, S. C.	14	25	25	10.7	18
				16.2	25
PACIFIC SLOPE DRAINAGE					
<i>Skagit Basin</i>					
Sauk: Sauk, Wash.	10	19	19	12.1	19
Skagit: Mt. Vernon, Wash.	22	19	19	22.0	19
<i>Stillaguamish Basin</i>					
South Fork: Arlington, Wash.	20.8	19	19	24.76	19
Stillaguamish: Arlington, Wash.	62.8	19	19	63.9	19
<i>Snohomish Basin</i>					
Snoqualmie: Tolt, Wash.	51.8	19	20	54.7	20
Snohomish: Snohomish, Wash.	20	18	20	27.2	19

³ Provisional.

CLIMATOLOGICAL DATA FOR OCTOBER 1947

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see Review, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and

lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature										Precipitation										
	Section average	Departure from the normal	Monthly extremes						Section average	Departure from the normal	Greatest monthly				Least monthly						
			Station	Highest	Date	Station	Lowest	Date			Station	Amount	Station	Amount	Station	Amount	Station	Amount			
Alabama	70.2	+5.4	2 stations	92	19	Valley Head	36	31	1.80	-1.09	St. Bernard	.54	Melvin	.37							
Arizona	63.0	+1.4	do	107	11	2 stations	13	23	1.12	+2.25	Pinedale	.72	10 stations	.00							
Arkansas	68.3	+5.4	Newport	95	14	Harrison	35	29	3.72	+5.55	Grannan	.37	Rogers	1.05							
California	60.1	-3.3	Greenland Ranch	109	5	Bridgeport Dam	16	30	2.89	+1.60	Squaw Creek R. S.	17.49	3 stations	.00							
Colorado	51.1	+4.1	Las Animas	98	1	Dillon	1	20	1.89	+6.68	Hawthorne	5.16	Troy	.01							
Florida	74.8	+4.4	2 stations	92	14	Compass Lake	49	31	6.88	+4.74	Dania	25.62	Sarasota City	1.81							
Georgia	68.2	+3.2	West Point	92	18	Blairstown	31	31	4.53	+1.85	Folkston	12.02	West Point	.35							
Idaho	49.8	+2.5	2 stations	90	4	Barton Flat	10	24	2.78	+1.25	Wallace	9.68	Mud Lake	.11							
Illinois	63.6	+7.7	do	92	15	Marengo	28	1	3.14	+5.50	East St. Louis	7.57	Moline Ap.	.28							
Indiana	62.5	+7.3	Madison	92	16	Bluffton	28	1	2.30	-4.45	Winchester	4.45	Notre Dame	.92							
Iowa	61.6	+9.0	Monroe	95	6	Hawarden	26	23	3.75	+1.44	Mount Ayr	7.61	Davenport	.86							
Kansas	65.8	+8.3	St. Francis	104	5	2 stations	25	24	1.29	-69	La Cygne	5.02	Coldwater	.09							
Kentucky	64.3	+5.8	2 stations	92	13	Headquarters	27	1	2.20	-43	Mayfield	5.34	Pikesville	.52							
Louisiana	73.4	+4.8	Leesville	96	16	2 stations	40	1	1.83	-4.41	Amite	5.84	Atchafalaya	T							
Maryland-Delaware	61.9	+5.5	Keedysville, Md.	94	23	Oakland, Md.	17	1	1.54	-1.49	Ocean City, Md.	4.79	Western Port, Md.	.75							
Michigan	57.7	+8.9	2 stations	90	15	Cadillac	17	1	1.08	-1.61	Howell	3.94	Rudyard	.00							
Minnesota	55.4	+8.7	3 stations	93	5	2 stations	22	18	1.61	-23	Winnebago	3.96	Grand Marais	.30							
Mississippi	70.7	+5.1	Europa	96	20	Vicksburg Ap.	38	29	1.80	-76	Yazoo City	4.88	Rio	.16							
Missouri	63.1	+7.2	Anderson	94	5	Tarkio	29	29	3.83	+87	Vichy	7.87	Granby	.83							
Montana	49.1	+3.9	Crow Agency	91	20	2 stations	13	24	1.33	+24	Heron	6.91	Hays	T							
Nebraska	59.6	+7.7	Gothenburg	104	5	Harrison	21	23	1.19	-27	Winside	3.79	Lexington	.62							
Nevada	53.1	+2.4	Overton	103	4	2 stations	9	25	.66	+01	Lamotte	2.83	Willow Springs	.00							
New England	53.6	+6.0	2 stations	91	17	do	13	25	1.37	-2.00	New Bedford, Mass.	4.55	Rumford, Maine	.04	(Coop.)						
New Jersey	60.4	+5.7	Hammonton	89	21	Layton	18	25	2.06	-1.56	Toms River	4.10	Millville	.31							
New Mexico	57.3	+3.5	Hatch	99	4	Selsor Ranch	9	26	.71	-45	Santa Clara R. S.	2.06	8 stations	.00							
New York	57.0	+6.9	Elmira	90	16	Roxbury	14	25	1.34	-1.97	Spencertown	4.29	Gabriel	.20							
North Carolina	63.8	+3.7	3 stations	89	11	Boone	25	1	5.32	+2.03	Mount Mitchell	18.71	Elizabeth City, C. G.	1.00							
North Dakota	51.2	+7.0	Oakes	97	5	Belcourt	12	28	1.31	+30	Selfridge	4.69	Crosby	.17							
Ohio	61.3	+7.5	Sidney	90	16	Millport	22	1	1.67	-85	Kenton	3.95	2 stations	.20							
Oklahoma	66.6	+6.9	Alva	103	5	Kenton	25	25	1.90	-1.00	Tipton	6.37	Woodward	.62							
Oregon	51.0	+1.2	2 stations	90	3	Sod House	13	22	5.38	+3.8	Valsets	28.33	Sod House	.66							
Pennsylvania	58.6	+5.9	Marees Hook	93	21	Somerset	17	1	1.34	-90	Mount Pocono	4.01	Corry	.35							
South Carolina	67.2	+3.5	5Miley	90	10	Walhalla	34	31	4.55	+1.62	Pelzer	13.53	Cheraw	1.33							
South Dakota	56.3	+7.4	Mardo	103	19	McLaughlin	15	27	1.83	+63	McLaughlin	4.03	Wood	.16							
Tennessee	65.9	+6.0	Centerville	92	13	Rugby	20	30	2.70	-10	Kenton	9.08	Lynnville	.55							
Texas	73.4	+5.7	Throckmorton	104	5	2 stations	32	24	1.24	-1.45	Roscoe	8.47	3 stations	.00							
Utah	52.4	+3.2	Zion National Park	97	4	Woodruff	8	24	1.83	+63	Rice Canyon	4.38	Gallao	.23							
Virginia	61.9	+4.4	Fredericksburg	94	22	Monterey	19	1	2.97	00	Rocky Knob	10.47	Gordonsville	.33							
Washington	50.0	0	Richland	86	3	Stockdill Ranch	21	22	7.39	+4.38	Wishkah Headworks	27.36	Wenatchee	1.79							
West Virginia	60.6	+5.8	McNeill	92	23	Canaan Valley	14	2	1.48	-1.35	Spruce Knob	4.01	Stony River Dam	.55							
Wisconsin	57.8	+9.3	Wisconsin Rapids	91	21	2 stations	17	1	1.57	-82	Prairie du Chien	3.76	Flambeau Reservoir	.46							
Wyoming	49.7	+5.8	Hampshire	98	1	Verse	5	23	2.21	+11	Middle Fork	3.17	Foxpark	T							
Alaska (Sept.)	42.2	-1.8	2 stations	70	16	2 stations	4	20	4.53	+91	Little Port Walter	26.53	Barrow	.67							
Hawaii	75.2	+3	Kaapsali	91	11	Haleakala R. S.	41	19	5.88	+18	Kahana	24.69	Ukumehame	.69							
Puerto Rico	78.9	+1.0	Dos Bocas	98	25	Garzas (2)	58	17	8.67	+68	Maricao	22.01	Central San Francisco	1.51							

* Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR OCTOBER 1947

District and station	Elevation of instruments		Pressure		Temperature of the air										Precipitation				Wind				Clouds				Snow, sleet, and ice on ground at end of month				Number of days with thunderstorms				
	Barometer above sea level	Thermometer above ground	Station	Sea level	Departure from normal	Mean	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily range	Total heating degree days	Mean temperature of the dew point	Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Miles per hour	Maximum velocity	Clear days	Party cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall							
	Ft.	Ft.	Ft.	Mb.	Mb.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	In.	In.	In.	Mi.	Date	Direction	Date	In.	In.	0-10	3-9	4-0	0-0	0-0						
NEW ENGLAND	Ft.	Ft.	Ft.	Mb.	Mb.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	In.	In.	In.	Mi.	Date	Direction	Date	In.	In.	0-10	3-9	4-0	0-0	0-0	2					
Eastport	75	67	82	1,015.2	1,018.0	+2.1	57.2	+6.4	78	7	62	35.25	46	26	300	43	74	.19	-3.4	0.09	3	9.8	sw.	23	17	7	7	4.0	0.0	0.0	0	0			
Greenville, Maine	1,069	4	41	979.7	1,019.6	+2.3	49.4	+4.9	82	18	64	25	35	45	488	39	82	.06	-2.9	.53	4	4.5	n.	23	13	12	6	0.0	0.0	0.0	0	0			
Portland, Maine	103	6	43	1,015.2	1,019.3	+2.0	58.3	+8.3	87	7	60	34	25	47	37	44	43	76	.26	-2.9	.26	1	8.2	sw.	27	20	5	6	3.6	0.0	0.0	0	1		
Concord	239	5	45	1,009.1	1,020.0	+2.7	55.2	+7.4	89	17	72	16	25	38	51	312	40	72	.59	-2.3	.39	4	5.9	nw.	35	19	4	8	3.8	0.0	0.0	0	1		
Burlington	403	6	51	1,004.4	1,019.3	+2.4	56.4	+7.2	85	17	70	23	24	44	39	203	45	77	.88	-2.1	.44	5	7.9	s.	30	20	14	12	5	4.2	0.0	0.0	0		
Boston	124	33	62	1,015.6	1,020.2	+2.9	61.6	+8.0	89	17	72	38	1	52	36	164	48	71	1.13	-2.0	.66	3	10.9	sw.	40	40	31	16	6	4.0	0.0	0.0	0		
Nantucket	12	4	34	1,020.0	1,020.7	+3.1	56.9	+2.7	73	18	65	33	25	49	30	254	52	90	1.13	-2.3	.71	4	11.8	s.	48	48	31	17	5	4.3	0.0	0.0	0		
Block Island	26	11	46	1,019.3	1,020.3	+2.7	59.6	+4.7	74	21	65	40	1	54	19	174	54	86	3.28	-3	1.79	4	13.9	sw.	27	20	3	8	3.5	0.0	0.0	0	1		
Providence	159	65	60	1,014.6	1,020.3	+2.7	61.4	+9.2	88	17	72	36	25	51	34	165	48	82	2.27	-8	1.29	4	7.9	sw.	23	17	7	7	4.2	0.0	0.0	0	1		
Hartford	159	5	44	1,014.9	1,020.7	+2.7	57.8	+6.6	84	23	72	26	26	44	39	238	48	84	2.10	-1.4	1.12	4	7.3	s.	24	24	23	17	7	4.2	0.0	0.0	0		
New Haven	107	5	39	1,016.9	1,020.7	+2.4	57.5	+5.7	82	23	68	30	25	46	32	244	40	82	2.30	-1.0	1.12	4	5.9	sw.	22	22	31	19	1	11	4.0	0.0	1		
MIDDLE ATLANTIC																															1				
Albany	97	6	40	1,016.6	1,020.0	+2.4	57.0	+7.7	88	16	72	20	25	42	46	262	44	80	2.30	-1	1.48	5	7.2	s.	32	23	16	8	7	3.8	0.0	0.0	1		
Binghamton	871	57	79	989.2	1,021.0	+2.7	58.4	+8.4	84	16	73	29	1	44	44	207	45	86	.80	-2	2.61	4	4.5	ne.	41	23	18	7	6	3.8	0.0	0.0	1		
New York	314	45	454	1,009.8	1,021.0	+3.0	63.2	+6.9	85	23	71	38	1	55	31	105	52	76	2.32	-1	2.33	7	10.6	sw.	20	24	14	14	11	4.9	0.0	0.0	1		
Harrisburg	374	30	47	1,007.5	1,021.3	+2.3	61.3	+6.5	86	23	73	34	25	50	38	139	47	72	.22	-2	.51	4	5.5	sc.	20	20	31	16	6	9.4	0.0	0.0	1		
Philadelphia	114	174	150	1,016.6	1,021.0	+2.0	64.2	+6.4	87	21	73	39	1	55	29	90	52	81	2.55	-3	2.29	6	5.5	s.	16	16	23	16	6	9.4	0.0	0.0	1		
Reading	323	47	306	1,009.1	1,021.0	+2.0	62.6	+7.2	86	23	74	34	25	51	39	121	58	81	1.88	-1	2.04	7	13.3	e.	49	31	12	6	13	5.2	0.0	0.0	0		
Scranton	805	72	104	991.5	1,020.7	+2.1	59.0	+7.1	84	16	71	31	25	46	38	194	70	77	1.31	-1.3	1.15	5	4.7	n.	20	20	23	21	4	6	3.1	0.0	1		
Atlantic City	52	37	172	1,018.6	1,020.7	+2.1	63.0	+6.1	85	21	69	37	1	57	26	95	57	85	2.29	-9	1.04	4	13.3	e.	19	19	31	12	6	13	5.0	0.0	0		
Trenton	150	89	107	1,013.9	1,020.7	+2.4	61.9	+6.3	85	23	72	37	1	51	34	134	74	82	1.56	-1.7	.94	5	7.9	s.	18	18	25	25	8	11	5.3	0.0	1		
Baltimore	123	100	215	1,016.6	1,021.0	+2.4	64.8	+6.6	91	23	74	36	1	56	35	82	53	76	1.20	-1.7	.94	3	5.6	s.	18	18	24	12	5	5.5	0.0	0.0	1		
Washington	112	56	100	1,016.9	1,021.0	+2.0	65.0	+7.6	76	23	76	36	1	54	37	77	56	80	1.31	-1.5	1.25	3	5.6	s.	33	33	24	11	9	11	5.1	0.0	0		
Cape Henry	18	8	54	1,019.0	1,019.6	+1.3	66.2	+4.1	82	23	71	42	1	61	23	44	60	86	1.75	-2.3	.31	6	12.4	ne.	33	33	24	11	8	12	5.4	0.0	2		
Lynchburg	636	5	58	995.6	1,020.7	+1.4	61.9	+4.7	85	21	72	34	1	52	33	130	54	84	1.33	0	.65	12	8.0	n.	26	26	27	12	6	5.0	0.0	0	1		
Norfolk	91	80	125	1,016.9	1,020.3	+1.3	67.4	+4.9	87	23	74	43	2	61	27	38	58	86	1.47	-1.6	.87	5	9.4	ne.	23	23	24	10	8	13	5.8	0.0	1		
Richmond	144	11	52	1,014.6	1,020.0	+0.7	64.6	+5.0	87	23	74	36	2	55	37	79	56	87	1.81	-1.1	.83	10	6.3	ne.	18	18	31	10	4	17	5.9	0.0	1		
SOUTH ATLANTIC																															1				
Asheville	2,253	77	92	940.7	1,019.6	-4	61.2	+5.9	82	21	71	38	31	52	36	126	53	85	3.39	+6	1.34	10	7.1	se.	27	27	16	10	5	16	6.2	0.0	0	1	
Charlotte	779	63	98	991.2	1,019.3	-4	65.8	+4.1	85	18	74	42	2	58	28	94	56	84	5.60	+2.7	1.56	13	6.4	n.	20	20	14	10	5	16	6.0	0.0	0	3	
Greensboro	886	6	56	988.5	1,020.3	+7	63.6	+5.1	85	22	74	32	1	53	29	40	94	56	90	2.54	-5	.88	11	7.8	ne.	24	24	14	10	5	16	6.0	0.0	0	3
Hatteras	11	5	47	1,017.6	1,018.0	-4	70.2	+4.3	79	16	75	52	2	66	15	20	66	89	91	4.8	+4	2.40	11	10.5	ne.	34	34	14	10	7	14	5.7	0.0	0	3
Raleigh	376	5	51	71	1,005.8	1,019.3	+3	66.2	+4.2	86	19	76	37	1	57	33	56	82	92	2.86	-3	2.41													

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR OCTOBER 1947—Continued

District and station	Elevation of instruments		Pressure		Temperature of the air										Precipitation				Wind				Average cloudiness, tenths		Total snowfall										
					Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Mean	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily range	Total	Mean temperature of the dew point	Mean relative humidity	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Miles per hour	Date	Clear days	Partly cloudy days	Cloudy days				
	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	°F.	°F.	°F.	°F.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
FLORIDA PENINSULA	FL.	FL.	FL.	FL.	MB.	MB.	MB.	MB.	MB.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	85	85	85	85	12.46	15	8.3	37	SW.	11	9.12	10	5.6	0.0	0.0	2	
Key West ⁴	21	10	64	1,012.5	1,013.2	-0.7	70.0	-1	86	16	84	72	22	74	14	0	0	0	72	81	84	12.46	14	12.6	a.	11	9.12	10	5.6	0.0	0.0	2			
Miami ⁴	25	242	249	1,012.9	1,013.9	-1.0	77.4	-6	84	17	81	68	11	73	11	0	0	0	70	84	13.49	14	12.6	a.	12	8.12	11	5.8	0.0	0.0	2				
Tampa ⁴	35	5	36	1,013.5	1,014.6	-1.3	76.0	+1.7	88	18	84	61	31	63	24	0	0	0	67	86	8.54	7	7.2	ne.	24	8.16	7	5.6	0.0	0.0	4				
EAST GULF																																			
Atlanta ³	1,173	33	72	976.3	1,017.3	-1.7	66.4	+4.6	84	18	75	46	31	58	28	33	57	81	3.50	+8.1	90	10	9.7	e.	28	ne.	15	6.13	12	6.2	0.0	0.0	0		
Macon ⁴	370	79	87	1,003.7	1,016.9	-1.7	68.6	+4.1	87	10	78	46	31	60	28	16	60	82	+1.2	1.16	12	6.4	e.	23	ne.	15	5.13	13	6.4	0.0	0.0	4			
Thomasville ⁴	27	48	51	1,006.8	1,016.6	-1.7	71.2	+3.0	86	17	80	53	1	63	25	0	0	6.00	+3.0	2.18	8	0	0	0	0	0	0	0	0	0	0	0			
Apalachicola ⁴	35	11	51	1,013.2	1,015.2	-1.7	73.2	+2.5	86	14	79	60	7	67	21	1	66	87	2.75	-4.1	45	10	8.9	ne.	25	n.	20	14	9	4.6	0.0	0.0	4		
Pensacola ⁴	56	54	79	1,013.9	1,015.9	-1.6	73.8	+3.9	88	14	81	59	29	67	21	0	0	64	85	3.52	-1.7	2.18	7	7.2	e.	20	se.	22	10	17	4	4.7	0.0	0.0	4
Anniston ⁴	618	6	32	998.6	1,017.6	-6.7	67.6	+4.6	87	14	80	39	29	55	38	31	58	84	1.09	-1.5	27	8	0	0	0	0	0	0	0	0	0	0	0		
Birmingham ⁴	700	5	63	992.2	1,016.9	-2.1	66.1	+6.7	88	15	80	49	29	58	33	21	59	82	2.10	-2.1	50	6	7.1	e.	24	e.	15	11	11	9	5.3	0.0	0.0	2	
Mobile ⁴	57	86	161	1,013.9	1,015.9	-1.7	73.4	+4.1	88	11	82	54	29	65	25	0	0	64	87	2.84	-8.1	0.00	10	6.8	n.	20	e.	5	9.17	5	5.2	0.0	0.0	6	
Montgomery ⁴	218	92	105	1,008.5	1,016.3	-2.3	72.0	+5.4	89	14	81	53	29	63	26	4	60	84	1.78	-6.0	1.05	5	4.6	e.	15	nw.	31	13	13	5	4.3	0.0	0.0	3	
Meridian ⁴	375	67	92	1,003.1	1,016.6	-1.4	70.6	+6.3	90	17	82	45	29	60	33	4	60	94	1.78	-2.2	50	3	6.9	n.	24	nw.	31	20	6	5	3.4	0.0	0.0	2	
Vicksburg ⁴	247	82	102	1,007.1	1,015.9	-2.4	71.8	+5.1	86	16	82	49	1	62	25	4	60	94	1.59	-2.2	50	3	6.9	n.	23	n.	19	12	14	5	4.3	0.0	0.0	2	
New Orleans ⁴	83	76	84	1,013.5	1,015.6	-1.3	76.1	+5.1	90	19	83	63	1	69	21	0	0	66	75	4.68	+1.3	2.08	8	5.8	e.	23	ne.	19	12	14	5	4.3	0.0	0.0	2
WEST GULF																																			
Shreveport ⁴	249	5	64	1,006.4	1,015.2	-2.4	72.2	+6.6	91	15	85	48	28	59	37	2	61	74	1.76	-9.1	30	3	6.0	n.	33	nw.	26	16	13	2	3.4	0.0	0.0	3	
Fort Smith ⁴	403	6	30	999.3	1,015.6	-1.7	69.2	+6.9	90	5	82	48	28	56	35	29	57	72	4.00	+1.0	2.07	6	6.1	n.	22	nw.	31	20	5	6	3.5	0.0	0.0	7	
Little Rock ⁴	357	26	58	1,003.7	1,016.3	-1.7	69.7	+6.1	89	14	81	47	1	59	31	17	59	74	2.57	+2.8	3.50	9	5.5	e.	29	n.	18	18	8	5	3.4	0.0	0.0	0	
Austin ⁴	605	10	41	993.2	1,014.6	-2.3	76.2	+7.9	94	18	88	57	1	64	31	0	61	65	0.02	-3.1	0.02	1	7.5	s.	24	n.	31	13	16	2	3.9	0.0	0.0	0	
Brownsville ⁴	57	54	1,010.8	1,012.9	-2.0	79.0	+7.9	94	31	89	61	21	69	27	0	69	78	1.54	-2.0	0.13	3	8.1	e.	32	ne.	19	8.20	3	4.6	0.0	0.0	0			
Corpus Christi ⁴	20	6	53	1,013.5	1,014.2	-1.7	78.0	+6.9	95	31	88	61	21	68	30	0	69	78	1.04	-1.9	0.04	1	9.2	s.	24	n.	31	17	11	3	3.7	0.0	0.0	2	
Dallas ⁴	512	3	45	996.6	1,014.9	-2.0	73.1	+5.8	95	5	84	49	20	62	39	9	60	68	0.32	-1.3	1.30	7	7.4	s.	27	w.	31	20	6	5	3.7	0.0	0.0	5	
Fort Worth ⁴	670	46	56	990.9	1,014.9	-2.0	73.2	+7.5	95	5	84	53	27	63	28	0	66	78	2.24	-3.1	2.23	2	7.4	s.	29	n.	31	9.16	6	5.1	0.0	0.0	2		
Galveston ⁴	54	122	19	1,013.2	1,015.2	-2.1	76.8	+4.1	86	15	81	63	29	72	18	0	70	82	2.11	-2.2	1.23	5	9.8	s.	27	n.	31	18	10	3	3.8	0.0	0.0	4	
Houston ⁴	128	157	190	1,009.8	1,014.9	-2.0	76.6	+6.3	92	18	85	54	28	63	29	0	60	66	0.54	-2.7	41	5	5.4	n.	17	nw.	31	18	10	3	3.8	0.0	0.0	4	
Palestine ⁴	510	64	72	997.6	1,015.2	-2.4	74.0	+6.8	92	18	85	54	28	63	29	0	66	81	0.53	-2.8	34	5	9.7	s.	29	n.	19	15	11	5	3.8	0.0	0.0	1	
Port Arthur ⁴	34	59	134	1,013.8	1,014.9	-2.1	76.6	+5.0	90	15	85	62	28	68	25	0	66	81	0.19	-2.0	13	2	7.3	s.	30	ne.	8	10	19	2	4.7	0.0	0.0	1	
San Antonio ⁴	693	8	51	989.8	1,014.2	-2.1	76.3	+5.8	93	5	89	51	1	64	36	0	62	66	0.19	-2.0	13	2	7.3	s.	30	ne.	8	10	19	2	4.7	0.0	0.0	1	
OHIO VALLEY AND TENNESSEE																																			
Chattanooga ⁴	762	6	66	990.2	1,017.6	-1.7	66.4	+7.8	86	14	78	39	31	54	37	46	56	80	2.45	-2	1.71	97	12	5.6	s.	22	e.	16	8.12	11	5.6	0.0	0.0	2	
Knoxville ⁴	995	27	71	982.7	1,018.6	+3	60.0	+7.4	86	22	77	40	30	55	37	41	57	70	1.61	-1.0	59	11	5.8	ne.	22	w.	19	8.11	12	5.5	0.0	0.0	6		
Memphis ⁴	399	5	49	1,302.0	1,016.3	-2.0	70.0	+8.8	89	14	82	44	1	58	36	21																			

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR OCTOBER 1947—Continued

District and station	Elevation of instruments			Pressure			Temperature of the air												Precipitation			Wind			Average cloudiness, tenths			Total snowfall							
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily range	Total heating degree days	Mean temperature of the dew point	Total	Departure from normal	Greatest in 24 hours	Average hourly velocity	Prevailing direction	Miles per hour	Direction	Date	Cloudy days	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms	Total snowfall							
	ft.	ft.	ft.	ft.	ft.	ft.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	in.	in.	in.	mi.	0-10	in.	in.	Direction	Date	Cloudy days	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms	Total snowfall							
SOUTHERN SLOPE	ft.	ft.	ft.	ft.	ft.	ft.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	in.	in.	in.	mi.	0-10	in.	in.	Direction	Date	Cloudy days	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms	Total snowfall							
Abilene ²	1,738	4	59	933.6	1,013.2	-3.4	73.0	+8.7	94	17	85	54	26	61	32	13	55	60	4.80	+2.3	3.49	6	12.6	s.	35	15	14	12	5	4.1	0.0	0.0	6		
Amarillo ²	3,676	5	42	859.4	1,013.5	-3.1	64.4	+8.6	91	4	79	37	23	50	38	104	45	56	31.12	3.14	1.10	40	10	16	9	6	4.0	0.0	0.0	3					
Del Rio	960	63	71	979.3	1,011.9	-3.3	77.2	+7.2	92	19	87	59	1	68	29	0	62	62	69	-1.1	.58	5	8.5	se.	21	n.	31	13	12	6	4.4	0.0	0.0	3	
Roswell ²	3,566	75	85	891.3	1,013.2	-2.4	63.6	+4.1	91	7	81	33	24	46	47	91	40	46	.52	-9	.27	3	7.7	s.	31	ne.	12	15	15	1	3.1	0.0	0.0	3	
SOUTHERN PLATEAU																																			
El Paso ²	3,778	36	85	885.9	1,011.5	-2.4	68.0	+6.0	91	9	82	40	27	54	39	32	36	33	.35	-4	.32	3	8.9	n.	34	ne.	12	24	5	2	2.2	.0	0.0	1	
Albuquerque ²	4,972	5	45	849.0	1,013.2	-1.7	60.4	+3.8	87	4	74	33	26	47	36	172	34	40	31	-5	.31	1	8.1	e.	42	e.	12	17	11	3	3.5	.0	0.0	3	
Flagstaff	6,907	34	48	792.1	1,017.3	+4.1	49.8	+2.9	83	4	66	20	25	33	48	475	32	56	1.39	.0	.76	4	6.0	sw.	21	nw.	11	21	4	6	3.0	.0	0.0	1	
Phoenix ⁴	1,107	39	87	972.9	1,011.5	-4	74.0	+3.4	102	4	88	48	23	60	38	4	42	40	.06	-4	.04	2	6.0	e.	21	nw.	11	21	6	6	3.0	.0	0.0	3	
Tucson ²	2,555	5	39	924.5	1,011.5	-7	70.4	+1.7	98	4	85	44	23	56	38	19	42	42	.80	+3	.41	5	5.5	se.	21	w.	11	20	10	1	2.4	0.0	0.0	0	
Yuma	142	9	54	1,005.8	1,010.5	-1.0	75.2	+1.9	105	4	91	52	23	60	41	0	48	44	T	-3	T	0	4.7	w.	23	w.	11	20	10	1	2.4	0.0	0.0	0	
MIDDLE PLATEAU																																			
Reno ¹	4,527	20	52	861.8	1,014.9	-1.7	51.6	+3.1	88	4	70	22	22	33	53	415	34	56	.17	-2	.12	3	7.0	s.	56	s.	20	10	8	13	5.7	.0	0.0	0	
Winnebago	4,339	5	56	867.3	1,014.9	-3.1	51.8	+3.5	86	4	68	17	22	35	48	407	32	50	.65	.0	.23	7	7.9	sw.	39	w.	20	11	5	15	5.8	T	.0	0.0	1
Modena	5,473	10	46	833.7	1,014.2	-1.4	50.6	+2.6	84	4	67	20	25	34	44	442	36	52	.81	+1	.75	3	10.1	sw.	31	sw.	20	18	6	7	3.9	T	.0	0.0	0
Salt Lake City ²	4,357	32	58	866.9	1,014.6	-2.0	56.4	+5.6	85	5	69	32	26	44	36	279	40	56	2.43	+1.1	.47	7	9.8	e.	33	s.	16	11	8	12	5.2	T	.0	0.0	2
Grand Junction ²	4,602	5	26	860.5	1,015.6	.0	56.5	+3.7	86	5	68	31	26	44	34	287	37	56	1.98	+1.0	.91	10	7.9	e.	34	s.	21	13	8	10	4.6	.0	0.0	1	
NORTHERN PLATEAU																																			
Baker ⁴	3,471	36	54	894.0	1,015.2	-4.1	50.4	+3.8	81	3	61	26	22	40	34	454	36	68	1.65	+7	.64	14	6.0	s.	23	sw.	16	4	10	17	7.0	.0	0.0	0	
Boise ¹	2,739	5	49	918.4	1,014.2	-4.1	55.2	+5.1	88	4	66	29	22	44	35	319	38	58	2.18	+9	.76	10	10.3	se.	43	nw.	20	5	14	12	6.4	.0	0.0	0	
Pocatello ²	4,478	5	31	863.2	1,015.9	-1.7	51.7	+5.2	80	4	65	22	25	38	43	412	34	58	.83	-8	.21	6	9.5	sw.	34	sw.	20	12	10	9	5.2	.0	0.0	0	
Spokane ²	1,929	6	51	944.5	1,013.2	-4.8	50.8	+2.5	76	3	58	32	25	43	43	42	42	76	5.41	+4.2	.97	20	6.6	sw.	26	sw.	19	1	4	26	8.6	.0	0.0	0	
Walla Walla	901	57	65	977.7	1,013.5	-4.1	55.8	+2.3	83	3	64	36	26	48	26	290	2.95	+1.4	.37	22	4.8	s.	20	w.	17	5	6	20	7.0	.0	0.0	0			
Yakima ²	1,076	4	54	973.9	1,012.9	-4.7	51.2	-.5	84	3	62	31	24	40	32	432	42	74	1.83	+1.2	.74	17	7.0	w.	4	7	20	7.5	.0	0.0	0				
NORTH PACIFIC COAST																																			
North Head	211	5	55	1,004.1	1,011.5	-6.1	53.8	+.9	68	24	58	43	26	50	15	350	50	88	11.00	+6.0	1.59	25	16.5	s.	60	s.	17	1	3	27	8.4	.0	0.0	0	
Seattle ²	125	90	321	1,007.8	1,012.5	-5.8	54.5	+.8	72	3	60	42	21	49	17	328	48	82	7.43	+4.6	1.97	21	10.3	se.	33	sw.	3	1	6	24	8.4	.0	0.0	0	
Tacoma	194	172	201	1,005.4	1,012.2	-5.8	53.2	+.2	70	3	59	38	21	48	22	362	38	80	2.80	+5.5	1.58	24	8.1	s.	32	s.	16	1	6	24	8.3	.0	0.0	1	
Tatoosh Island	86	5	61	1,007.5	1,010.5	-6.4	52.2	+2.3	62	9	56	45	22	48	11	393	48	86	14.20	+6.1	2.36	25	16.1	e.	51	s.	2	1	5	25	8.5	.0	0.0	1	
Medford ²	1,329	29	58	967.0	1,014.6	-3.0	55.8	+2.2	90	3	67	35	25	45	42	291	46	72	3.00	+1.6	1.08	10	n.	5	22	7.7	.0	0.0	0						
Portland, Oreg. ²	154	68	106	1,007.8	1,013.2	-4.8	56.4	+2.2	76	3	62	46	22	51	20	275	50	82	9.70	+6.6	1.70	25	5.5	se.	19	s.	17	1	4	26	9.0	.0	0.0	0	
Roseburg	510	45	76	995.6	1,014.2	-4.1	57.6	+3.7	81	3	66	39	6	49	27	241	49	75	6.42	+3.8	2.82	22	3.8	s.	19	sw.	10	1	7	23	8.2	.0	0.0	0	
MIDDLE PACIFIC COAST																																			
Eureka	60	72	88	1,014.2	1,016.6	-1.7	61.1	+0.8	72	31	63	42	6	51	20	243	51	80	6.50	+4.2	2.01	13	7.5	se.	28	s.	31	2	7	22	6.2	.0	0.0	1	
Red Bluff ²	353	5	52	261,002.0	1,014.6	-6.8	62.8	-1.5	99	3	72	46	31	53	32	123	48	64	3.90	+2.6	1.26	9	8.4	se.	36	s.	15	10	6	15	6.1	.0	0.0	0</	

SEVERE LOCAL STORMS FOR OCTOBER 1947

[The table hereunder contains such data as have been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook.]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Beaches, Fernandina to New Smyrna, Fla.	Oct. 1947 Sept. 26 Oct. 6				\$5,000,000	"Northeaster," with high tides.	A prolonged period of northeast winds, occasionally strong, caused abnormally high tides and heavy surf; washed out seawalls, carried away beach sand, and undermined houses causing them to collapse. Estimated that \$4,000,000 of total damage occurred in September and \$1,000,000 in October. Report of September damage made in the "Florida Climatological Data for September."
Shawnee Co., Kans.	3	6 p. m.	33	0	500	Tornado	An incipient vortex cloud seen from the Boys' Industrial School, Topeka; evidently developed and reached ground at Stroud home 4½ miles to northeast, where vortex cloud was plainly seen. Large hay barn roof blown off and 1 or 2 small buildings damaged. A few trees damaged.
Denver, Colo.	7	5 p. m.		1	100,000	Electrical	Lightning struck tree, glancing off to hit girl.
Jacksonville, Fla.	7	8:15 p. m.	150 to 30	0	100,000	Tornado during thunderstorm.	Tornado
Green Cove Springs, Fla.	7	7:30 p. m.		0		Tornado	Lightning struck a trailer village and did considerable damage.
Levelland, Hockley Co., Tex.	8	3:15 p. m.	16		1,800,000	Hail	\$1,000,000 damage to buildings and automobiles; \$750,000 damage to crops; \$50,000 damage to livestock.
South Dakota, western portion.	10			0		Forest fire	Forest fire, 10 miles south of Deadwood, burnt over 2,000 to 3,000 acres.
Off Cape Maisi, Cuba	11	9 a. m. E. S. T.		0		Waterspout	Spout moved slowly westward and appeared to move out from beneath itself at the water's surface before disintegrating; under observation for 14 minutes.
Miami and vicinity, Fla.	11-12	Night of 11 to morning of 12		0		Tornadoes	Several tornadoes, in connection with passage of tropical storm, did considerable damage to roofs.
Tornillo, El Paso Co., Tex.	13	Afternoon		0	100,000	Hail and tornado	Principal damage to cotton and alfalfa. 1 barn roof blown off.
Leoti, Wichita Co., Kans.	14	3:30 p. m.			500	Heavy hail	Covered only a few square miles.
South Carolina, southern portion.	15	12 a. m. to 12 noon		1	185,000	Winds and high tides	Strong gales prevailed along the coast, especially from Charleston area southward, due to tropical storm moving inland near Savannah, Ga.; strongest wind at Charleston, 54 m. p. h., at 3:55 a. m.; Parris Island reported gusts to 65 m. p. h., at 4:30 a. m. Tides on lower coast ranged from 12 feet above mean low at Parris Island to 9 feet above at Charleston. \$150,000 damage to crops. Man killed by falling tree at Charleston.
Chatham Co., coastal area, Savannah, Savannah Beach, Ga.	15	6 a. m.			2,000,000	Hurricane	Wind velocities estimated at more than 100 m. p. h. on coast, gusts as high as 95 at Savannah. Damage consisted of some structures demolished or practically so; many roofs blown off or badly damaged; windowpanes and plate glass windows blown out in every section; many trees blown down or delimated, with resultant damage in communication lines or to nearby structures. 1,500 or more buildings substantially damaged, 100 of which were business houses. Damage to Savannah Beach almost \$1,000,000, with heavy damage in city of Savannah. Damages to crops, chiefly pecan trees, probably as great as \$100,000. Storm rapidly lost intensity as it moved inland, with damage almost wholly limited to section between Savannah and Brunswick not more than 50 miles from coast; losses in this area appear to be less than \$250,000, mostly to timber, communication lines, roads, and bridges.
Abilene, Taylor Co., Tex.	15	6:40 p. m.	13		35,000	Hail	Principal damage to buildings and livestock.
Shawnee, Pottawatomie Co., Okla.	17	6:30 p. m.			2,000	Electrical and high wind	Electric power disrupted; a few chicken houses and cow barns blown over; some trees blown down.
Galax, Va.	17-18	7 p. m. to shortly after midnight.			250,000	Flash flood	Chestnut Creek out of banks. Furniture factories lost expensive lumber. A milk cannery's boiler room submerged, resulting in loss of great quantity of milk on hand and spoilage of 3 days' supply already contracted for. 7 houses carried away; occupants of 180 other homes forced to leave. City's water supply system became inoperative.
Montgomery Co., Tenn.	18	2:15 a. m.			4,500	Electrical	Damage from fires set by lightning.
Montgomery Co., Tenn.	18	6:00 a. m.			800	do	1 barn and contents burned.
Fairview, Major Co., Okla.	22	8 p. m.			3,000	do	1 barn with 800 bales alfalfa hay burned after being struck by lightning.
Garnett and Anderson Cos., Kans.	23	Evening	12		3,500	High winds and hail	Storm from southwest; path 100 yards long. A number of small farm buildings damaged. Some evidence of a tornado.
Munday, Knox Co., Tex.	24	7:40 a. m.			4,000	Hail and electrical	Principal damage to cotton. 1 person injured by lightning.
Galax, Va.	25	3-4 a. m.				Heavy rains and flooding	Chestnut Creek again out of banks. About 100 families forced to evacuate their homes. City's water supply system inoperative. 4 furniture plants closed because of unavailability of water.
Coleman, Tex.	25	Afternoon			10,000	Hail	Damages to cotton, late feed, roofs, and windows.
Junction, Kimble Co., Tex.	25	5 p. m.	13		24,000	Hail and wind	Principal damage by hail to roofs and windows.
Jacksonville to Rusk, Cherokee Co., Tex.	26	Afternoon	14		305,000	do	Principal damage to buildings and automobiles.

¹ Miles instead of yards.

LATE¹ STORM REPORTS FOR JULY-SEPTEMBER 1947

[The table hereunder contains such data as were received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Mexico and vicinity Audrain Co., Mo.	July 5	Afternoon				High wind, hail, and electrical.	Storm from northwest blew down trees and wires, and damaged farm buildings. Some damage occurred to oat, wheat, and corn crops. Hailstones 3/4 inch in diameter.
Eldon, Miller Co., Mo.	5	6 a. m.		1		Electrical.	A minister killed when lightning struck tent pole at a religious camp meeting. 3 women in another tent shocked, but not seriously injured.
Fulton, Callaway Co., Mo.	28	6-9 a. m. and afternoon.				High wind and electrical.	Storm from northwest damaged trees, wires, and porches; lightning struck a home and 2 barns, resulting in destruction of 1 barn and contents of hay, feed, farming implements, and harness. During afternoon lightning struck another barn, burning it to ground; loss of contents of hay, feed, farm equipment, and harness, and several head of livestock.
Gerald and Stanton, Franklin Co., Mo.	28	7-8 a. m.	10	1	2,000	High wind.	Storm from north over a strip 20 miles long. Fruit trees stripped of 25 percent of fruits; some trees uprooted, and roofs damaged. Damage to fruit not known. 1 death caused by falling tree.
Iowa, south-central portion	August 25	Early morning				Electrical, wind and rain.	Local damage from wind and lightning. Light plant at Winterset, Madison Co., flooded. Many cornfields knocked down by wind. In Des Moines, electric power off for several hours. 300 telephones out of order.
Sanborn, O'Brien Co., Iowa	27	Evening	1 1/4-2			Hail.	Hailstones, larger than a quarter, stripped area 9 miles long.
Charles City, Floyd Co., Iowa	28	9 p. m.			40,000	Electrical.	Lightning struck dairy farm, resulting in fire; loss of building and much livestock.
Hampton, Franklin Co., Iowa	29	Early morning				Heavy hail.	Hail ranged up to 1 inch in diameter.
Sept.							
Navajo Co., Ariz.	2				5,000	Flash floods.	Shoulders and bridges of highway U. S. 66 damaged.
Leon, Decatur Co., Iowa	3	4:30 a. m.				Wind.	Winds of near tornadic velocity damaged 1 business building, high school, and many homes. Strong winds only lasted several minutes.
Charles City, Floyd Co., Iowa	9	Evening			5,000	Wind.	Storm one of the worst in recent years; 46 m. p. h. wind for 5-minute interval. Funnel-shaped cloud observed, but rotary winds did not reach ground. Main damage to farms near city limits; windows broken and many trees blown over in city.
Des Moines, Iowa	11	8 p. m.			150,000	Electrical.	Lightning struck Iowa Pipe & Tile Co., causing fire and complete loss of building.
Safford-Bowie Junction, Graham Co., Ariz.	20				1,700	Heavy rains.	Bank protection and cut-off walls on Douglas-Safford Highway, near Artesia damaged.

SOLAR RADIATION OBSERVATIONS—Continued

TABLE 1.—*Solar radiation intensities during October 1947—Con.*
 [Gram calories per minute per square centimeter of normal surface]

Date	Sun's zenith distance								Vapor pressure	
	A. M.				P. M.				7:30 a. m. ¹	1:30 p. m.
	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°		
1900	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	7:30 a. m. ¹	1:30 p. m.

BLUE HILL, MASS.

Air mass											
	4.86	3.89	2.92	1.94	*0.97	1.94	2.92	3.89	4.86		
October	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.	mb.
1	1.04	1.14	1.21	1.38		1.18	1.01	0.87	0.75	4.4	4.1
3			1.13							8.3	10.0
4		.71	.80	.96	1.13	1.00	.76	.66	.52	11.3	10.9
5						1.04	.85	.71	.66	12.6	13.2
6						.94	.71	.60	.45	13.3	15.6
7		.61	.71	.83	1.00	.92	.78	.66	.57	13.7	15.0
10		.95	1.05	1.19						8.0	9.6
11		.81	.92	1.05	1.19	1.18	1.02	.84	.72	8.7	9.1
12		.83	.95	1.09	1.26	1.29	1.15	1.00	.89	11.1	9.3
14		.86	.99	1.16	1.25	1.31	1.15	1.05	.95	13.5	13.6
15		.83	.95	1.09	1.22	1.19	1.06	.95	.86	11.8	9.2
16		.79	.89	1.01	1.18	1.00	.79	.64	.52	10.7	12.9
17		.65	.77	.92	1.19					16.3	16.5
20						1.15	.94	.91	.78	15.6	10.6
21		.79	.90	1.03	1.24	1.32	1.14	1.00	.91	8.4	5.6
22		1.09	1.17	1.26	1.38	1.31	1.18	1.05		6.4	5.1
27		.46	.56	.71		1.03	.71	.56	.43	12.8	11.4
Means	.80	.91	1.05	1.22		1.13	.95	.82	.69		
Departures	-.06	-.04	-.03	-.01		-.08	-.07	-.09	-.09		

TABLE 2.—*Daily totals and weekly means of solar radiation (direct + diffuse) received on a horizontal surface*
 [Gram calories per square centimeter]

ACCUMULATED DEPARTURES ON OCTOBER 28, 1947

$$+6,251 +1,981 -392 -5,418 +7,910 \dots \dots +882 +791 -812 -6,447 +8,127 +994 -3,108 \dots \dots -5,726 +2,520 -1,736 -203 \dots \dots$$

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1947 **POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1947—Continued**

By LUCY T. DAY

NOTE: Publication of "Positions, Areas, and Counts of Sunspots" in the **MONTHLY WEATHER REVIEW** will be discontinued with the December 1947 issue. The data will be issued thereafter through publications of the U. S. Naval Observatory, at various times depending on the sunspot activity. Current data will be distributed monthly to a limited number of persons on request addressed to Superintendent, U. S. Naval Observatory, Washington 25, D. C.

[Equatorial Division, U. S. Naval Observatory]

[Communicated by the Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive towards the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day under Mount Wilson group number, longitude, latitude, area of spot or group, and spot count, are included respectively: number of groups, assumed longitude of center of the disk, assumed latitude of center of the disk, total area of spots and groups, and total spot count.

Date	Eastern standard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate quality	Observatory
			Difference in longitude	Longitude	Latitude	Distance from center of disk				
1947										
Oct. 3	8 10 20	8857	+	267	-3	+	73	4	G	U. S. Naval.
		8862	+46	277	+8	46	97	11		
		8843	+49	280	+18	49	16	5		
		8841	+59	290	+14	59	48	3		
		8856	+62	293	+8	62	24	4		
		8846	+67	298	+17	67	145	8		
		8846	+71	302	+18	71	291	3		
		8839	+09	300	-12	71	48	1		
		8839	+70	301	-10	71	61	3		
		(19)	(293)	(+7)			3,884	178		
4	10 12	8868	-65	152	+14	65	24	4	F	Do.
		8869	-61	156	+11	61	6	1		
		8864	-48	169	-12	51	73	5		
		8861	-47	170	-18	52	194	1		
		8863	-46	171	+17	47	6	1		
		8863	-41	176	+16	41	97	1		
		8859	-35	182	+19	36	339	15		
		8859	-31	186	+18	33	436	6		
		8859	-27	190	+19	30	485	5		
		8867	-23	194	+11	23	12	2		
		8866	-14	203	+18	18	145	13		
		8858	-10	207	+25	21	267	9		
		8858	-3	214	+24	18	170	7		
		8855	-6	211	-15	23	121	5		
		8855	0	217	-14	21	145	3		
		8855	+6	223	-14	22	388	14		
		8865	+15	232	-24	34	73	6		
		8852	+24	241	-11	30	145	3		
		8852	+27	244	-8	31	121	4		
		8851	+36	253	-17	43	48	4		
		8857	+42	259	-4	43	194	8		
		8857	+48	265	-3	49	170	7		
		8862	+60	277	+9	60	170	3		
		8843	+63	280	+18	63	16	2		
		8841	+73	290	+15	73	12	1		
		8856	+78	295	+9	78	48	1		
		8846	+83	300	+16	83	97	1		
		8846	+86	303	+17	86	194	1		
		(19)	(217)	(+7)			4,196	133		
5	11 5	8868	-51	153	+14	51	12	3	F	Do.
		8864	-34	170	-12	39	73	13		
		8861	-33	171	-18	41	194	1		
		8863	-27	177	+17	29	61	1		
		8859	-18	186	+18	21	1,406	25		
		8870	-21	183	+11	22	12	3		
		8866	-3	201	+17	11	73	5		
		8866	+3	207	+17	11	36	2		
		8858	+5	209	+24	18	242	8		
		8858	+11	215	+22	18	73	6		
		8855	+8	212	-16	25	12	6		
		8855	+19	223	-14	28	242	9		
		8865	+29	233	-25	43	21	2		
		8852	+39	243	-12	44	145	1		
		8852	+41	245	-10	44	73	2		
		8851	+52	256	-18	57	12	3		
		8857	+60	264	-4	62	436	7		
		8862	+74	278	+9	74	145	2		
		(14)	(204)	(+7)			3,271	99		
6	10 22	8868	-37	154	+14	37	6	1	F	Do.
		8861	-20	171	-19	32	194	1		
		8864	-20	171	-11	26	73	7		
		8871	-17	174	+9	18	24	1		
		8863	-15	176	+17	19	61	2		
		8859	-4	187	+18	14	1,261	20		
		8866	+9	200	+17	14	48	3		
		8866	+17	208	+17	21	24	3		
		8858	+17	208	+24	24	242	8		
		8858	+25	216	+22	28	61	6		
		8855	+23	214	-16	32	24	2		
		8855	+32	223	-15	38	194	7		
		8865	+43	234	-25	53	12	3		
		8852	+51	242	-12	55	145	1		
		8852	+54	245	-10	56	61	2		
		8872	+53	244	-14	57	6	1		
		8857	+68	259	-5	70	242	1		
		8857	+78	269	-4	79	194	1		
		8862	+85	276	+10	85	97	2		
		(14)	(191)	(+6)			2,969	72		
7	10 17	8875	-78	100	+17	78	16	1	G	Do.
		8861	-7	171	-18	26	194	1		
		8864	-6	172	-11	18	12	5		
		8871	-3	175	+9	4	24	2		
		8863	-2	176	+17	12	61	1		
		8859	+3	181	+19	14	436	20		
		8859	+8	186	+18	15	97	10		
		8859	+13	191	+18	18	824	14		
		8859	+10	188	+21	17	12	4		
		8866	+21	199	+17	24	24	6		
		8866	+31	209	+17	33	12	2		
		8858	+27	205	+27	34	6	3		
		8858	+30	208	+26	35	242	6		

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1947—Continued

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1947—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic						Observatory	Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic						Observatory				
			Dif- ference in longi- tude	Lon- gitude	Lat- itude	Dis- tance from center of disk	Area of spot or group	Spot count					Dif- ference in longi- tude	Lon- gitude	Lat- itude	Dis- tance from center of disk	Area of spot or group	Spot count					
Oct. 7	10 17	8858	0	0	0	0	0	0	U. S. Naval.	Oct. 13	9 35	8873	+46	145	-15	51	194	1	F	U. S. Naval.			
		8855	+39	217	+22	41	24	5				8861	+70	169	-18	75	145	1					
		8852	+65	243	-13	68	242	9				8864	+70	169	-12	73	48	1					
		8853	+69	247	-9	71	12	1				(6)	(90)	(+6)		1,060	18						
		8857	+82	260	-4	82	242	1															
		(11)	(178)	(+6)		2,625	101																
8	10 24	8876	-53	82	+20	83	194	1	F	Do.	14	10 10	8881	-80	6	-23	82	145	3	F	Do.		
		8877	-80	85	+9	50	24	1				8881	-69	17	-22	74	242	7					
		8875	-64	101	+17	64	12	1				8876	-8	78	+11	17	170	10					
		8874	-63	102	-16	66	24	3				8880	+12	98	+17	16	97	12					
		8873	-26	139	-15	34	24	4				8874	+27	113	-19	37	16	2					
		8861	+6	171	-18	25	194	1				8873	+54	140	-16	59	242	4					
		8864	+7	172	-12	19	24	6				8873	+59	145	-15	63	145	1					
		8871	+11	176	+8	11	12	2				8861	+86	172	-19	88	145	1					
		8863	+11	176	+16	15	73	9				(7)	(86)	(+6)		1,444	41						
		8859	+18	183	+18	22	436	19															
		8859	+26	191	+21	30	6	1				15	10 29	8884	-87	345	+19	87	291	1	G	Do.	
		8859	+27	192	+17	29	824	6				8881	-63	9	-24	69	145	10					
		8858	+43	208	+24	46	121	11				8881	-62	10	-26	68	97	1					
		8866	+44	209	+16	45	6	1				8881	-57	15	-22	64	194	2					
		8855	+60	225	-44	63	145	6				(*)	-2	70	+14	8	6	2					
		8852	+78	243	-13	80	242	5				8879	+6	78	+12	8	170	7					
		(14)	(165)	(+6)		2,361	77						8883	+7	79	+4	7	12	3				
9	9 51	8879	-76	76	+9	76	267	5	VG	Mt. Wilson.			8876	+10	82	+20	16	206	1				
		8876	-70	82	+19	70	291	1				8880	+26	98	+17	28	97	17					
		8877	-65	86	+9	66	24	1				8882	+27	99	-24	41	12	6					
		8875	-51	101	+16	52	12	2				8874	+34	106	-16	40	16	7					
		8874	-49	103	-16	56	24	1				8873	+67	139	-15	71	145	5					
		8873	-12	140	-15	24	48	8				8873	+73	145	-16	78	194	3					
		8873	-7	145	-15	22	61	1				(10)	(72)	(+6)		1,585	66						
		8861	+19	171	-18	31	194	1															
		8864	+19	171	-12	26	73	19				16	15 12	8884	-71	345	+19	71	339	1	G	Do.	
		8863	+24	176	+17	26	48	1				8888	-67	349	-11	70	97	6					
		8859	+30	182	+19	33	339	22				8887	-48	8	-7	51	97	7					
		8859	+32	184	+19	35	145	20				8881	-48	8	-24	56	170	12					
		8859	+40	192	+20	42	727	5				8881	-43	13	-22	51	388	11					
		8878	+44	196	+11	44	36	6				8886	+1	57	+12	6	24	6					
		8858	+54	206	+26	56	12	2				8879	+21	77	+12	22	145	4					
		(*)	+72	224	+32	73	12	1				8876	+26	82	+20	29	218	1					
		8855	+74	226	-14	76	121	1				8885	+37	93	+7	37	12	1					
		(14)	(152)	(+6)		2,434	97						8880	+41	97	+17	42	36	4				
10	14 2	8879	-62	74	+10	62	267	5	F	U. S. Naval.			8880	+47	103	+16	48	73	3				
		8876	-55	81	+20	56	242	1				8874	+47	103	+16	52	48	3					
		8877	-45	88	+9	48	12	1				(10)	(56)	(+6)		1,647	59						
		8874	-34	102	-17	41	12	1															
		8873	+4	140	-15	22	194	6				17	12 42	8884	-59	346	+19	60	339	1	G	Do.	
		8873	+8	144	-15	23	291	3				8888	-54	351	-11	56	73	5					
		8861	+33	169	-18	41	194	1				8881	-38	7	-27	51	218	14					
		8864	+33	169	-12	38	61	4				8881	-35	10	-24	46	145	6					
		8863	+40	176	+17	41	48	2				8881	-30	15	-23	42	194	1					
		8859	+45	181	+19	47	145	6				8887	-36	9	-7	39	61	6					
		8859	+54	190	+17	55	970	7				8886	+12	57	+14	14	12	1					
		8878	+61	197	+10	61	73	2				8879	+33	78	+12	33	109	3					
		(10)	(136)	(+6)		2,509	39						8876	+38	83	+20	40	218	1				
11	12 35	8879	-49	75	+10	49	194	6	F	Do.			8885	+48	93	+7	48	6	1				
		8876	-42	82	+20	44	242	1					8880	+55	100	+17	56	48	2				
		8877	-35	89	+9	35	12	1					8880	+60	105	+15	60	100	4				
		8874	-14	110	-21	31	12	2					8874	+60	105	-17	64	145	6				
		8873	+16	140	-15	26	242	2					(10)	(45)	(+6)		1,677	51					
		8873	+21	145	-15	29	242	1															
		8861	+16	146	-15	52	194	1					18	13 44	8890	-72	319	-29	76	194	1	G	Do.
		8864	+16	170	-18	52	194	1					8884	-46	345	+18	47	364	1				
		8864	+16	170	-18	52	194	1					8888	-40	351	-13	44	48	4				
		8863	+52	176	+17	53	24	1					8881	-25	6	-27	41	291	21				
		8859	+59	183	+19	60	48	6					8881	-17	14	-23	34	558	19				
		8859	+63	187	+17	63	242	7					8887	-23	8	-8	26	24	2				
		8859	+69	193	+17	69	630	1					8886	+25	56	+13	26	12	3				
		8878	+75	199	+10	75	48	1			</												

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1947—Continued

**POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947—Continued**

Date	Eastern standard time	Mount Wilson group No.	Heliographic						Observatory	Date	Eastern standard time	Mount Wilson group No.	Heliographic									
			Difference in longitude	Longitude	Latitude	Distance from center of disk	Area of spot or group	Spot count					Difference in longitude	Longitude	Latitude	Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory		
1947 Oct. 19	13 3	8876	0 +62	80 +19	0 62	145	1	F	U. S. Naval.	1947 Oct. 25	10 0	8907	0 -75	-14	77	194	1	F	U. S. Naval.			
		(10)	(18) (+6)	(18)	(-6)	1,858	49					8903	-64	-18	68	194	1					
20	9 26	8896	-85 282	-12 85	56 194	145	4	G	Do.			8901	-60	-11	62	36	1					
		8896	-80 287	-12 80	201	2						8901	-53	248	-10	55	242	1				
		8895	-78 280	-12 78	48	2						8902	-59	242	+21	60	145	10				
		8890	-60 307	-31 66	48	1						8907	-39	292	-2	40	48	4				
		8890	-47 320	-30 56	194	1						8907	-32	269	-2	33	242	2				
		8893	-32 335	+12 32	218	19						8900	-23	278	+18	26	16	3				
		8893	-28 339	+10 29	242	4						8896	-23	278	-15	30	194	1				
		8894	-30 337	-10 34	6	1						8896	-15	286	-13	24	145	19				
		8894	-20 347	+18 24	330	1						8890	-8	293	+20	17	61	7				
		8892	-20 347	-4 23	16	4						8890	+13	314	-29	36	145	9				
		8888	-15 352	-13 23	24	3						8899	+16	317	+21	23	388	5				
		8881	+1 8	-28 33	121	10						8893	+34	325	+11	35	73	14				
		8881	+7 14	-25 31	436	11						8893	+41	342	+9	41	291	4				
		8887	+3 10	-8 14	24	8						8905	+40	341	-14	44	24	4				
		8879	+71 78	+9 71	73	2						8884	+45	346	+17	46	291	1				
		8876	+73 80	+9 74	194	1						8904	+72	13	+17	73	12	1				
		(12)	(7) (+5)		2,419	74						8881	+73	14	-25	76	242	6				
21	9 26	8897	-88 266	-3 88	194	1	G	Do.				(16)	(301)	(+5)		3,541	105					
		8896	-71 283	-15 73	776	12						26	9 39	8907	-62	226	-14	65	170	1	VG	Mt. Wilson.
		8896	-65 289	-12 66	388	8						8903	-51	237	-18	55	194	1				
		8895	-64 290	+22 65	242	7						8901	-46	242	-12	48	24	13				
		8890	-48 306	-30 57	48	3						8901	-40	248	-10	45	242	3				
		8890	-34 320	-30 47	145	2						8902	-46	242	+22	48	97	26				
		8893	-20 334	+12 21	170	17						8897	-28	260	-2	29	24	3				
		8893	-14 340	+10 15	194	8						8897	-19	269	-2	21	218	3				
		8884	-7 347	+18 15	339	1						8896	-11	277	-15	22	170	6				
		8881	+12 6	-29 36	48	6						8896	-2	286	-13	18	97	32				
		8881	+20 14	-25 35	412	12						8896	+6	294	-14	20	158	3				
		(7)	(354) (+5)		2,956	77						8895	+5	293	+20	16	48	14				
22	9 25	8897	-72 268	-3 72	145	1	F	Do.				8890	+27	315	-29	48	121	15				
		8896	-58 282	-15 60	582	17						8899	+32	320	+21	35	206	8				
		8896	-52 288	-12 54	339	8						8898	+29	317	+12	30	145	16				
		8895	-50 290	+22 52	145	5						8898	+34	322	+12	35	267	2				
		8890	-38 302	-30 51	24	2						8893	+48	336	+12	49	48	17				
		8890	-22 318	-30 41	194	2						8893	+55	343	+10	55	242	5				
		(*) 11 339	-25 32	6	1							8905	+53	341	-14	36	73	11				
		8893	-7 333	+12 10	170	18						8884	+58	346	+17	39	242	1				
		8893	0 340	+9 4	218	4						(13)	(288) (+5)			2,980	185					
		8884	+6 346	+18 15	291	1						27	11 45	8908	-83	190	+19	83	194	2	F	U. S. Naval.
		8888	+10 350	-13 20	12	3						8907	-48	225	-14	52	170	1				
		8881	+24 4	-29 41	24	3						8903	-37	236	-18	44	170	1				
		8881	+32 12	-25 42	388	11						8902	-36	237	+22	38	24	3				
		(9)	(340) (+5)		2,538	76						8901	-26	247	-10	30	242	1				
23	9 27	8902	-85 242	+19 85	48	1	VG	Do.				8897	-5	268	-1	6	12	1				
		8901	-80 247	-10 80	194	1						8897	-4	269	-3	8	218	4				
		8897	-59 268	-3 60	267	3						8896	+4	277	-15	20	109	1				
		8900	-49 278	+16 50	16	10						8896	+7	280	-14	21	24	4				
		8896	-50 277	-15 53	170	1						8896	+15	288	-15	24	121	7				
		8896	-48 279	-17 52	73	1						8896	+19	292	-13	25	24	6				
		8896	-45 282	-14 49	388	23						8896	+22	295	-13	28	109	1				
		8896	-37 290	-13 42	242	10						8895	+20	293	+19	24	48	6				
		8895	-37 290	+22 40	145	20						8899	+39	312	+21	41	194	1				
		8890	-24 303	-30 42	24	2						8899	+46	319	+21	48	206	1				
		8890	-13 314	-29 36	12	5						8890	+40	313	-29	52	48	2				
		8890	-10 317	-30 36	170	1						8898	+42	315	+13	42	109	6				
		8899	-10 317	+21 19	97	3						8898	+48	321	+13	49	291	1				
		8898	-10 317	+13 13	24	6						8905	+67	340	-13	69	48	2				
		8893	+6 333	+12 8	145	20						8893	+71	344	+10	71	170	4				
		8893	+14 341	+9 15	218	7						8884	+72	345	+17	72	242	1				
		8884	+19 346	+18 24	267	1						(14)	(273) (+5)			2,773	56					
		8881	+40 7	-26 50	73	4						28	12 16	8909	-80	180	-9	80	388	1	F	Do.
		(*) +73 40	+6 73		24	2						8908	-69	191	+19	69	194	2				
		(13)	(327) (+5)		2,985	130						8907	-34	226	-14	39	121	1				
24	10 41	8903	-77 236	-18 78	194	1	F	Do.				8903	-23	237	-18	32	97	1				
		8902	-75 238	+19 76	97	2						8901	-18	242	-14	26	24	2				
		8902	-70 243	+21 71	48	1						8901	-12	248	-11	21	206	1				
		8901	-73 240	-11 74	24	1						8907	+3	263	-4	9	16	4				
		8901	-66 247	-9 67	194	1						8897	+9	269	-2	11	6	1				
		8897	-51 262	-1 52	24	2						8897	+10	270	-2	12	242	1				
		8897	-46 267	-2 47	242	4						(*)	+13	273	+24	23	6	1				
		8900	-35 278	+16 36	6	1						8896	+17	277	-15	26	73	3				
		8896	-33 280	-15 38	339	10						8896	+29	289	-15	36	48	3				
		8896	-23 290	-14 29	29	6						8896	+35	295	-15	40	73	4				
		8895	-23 290	+21 27	97	10						8895	+33	293	+19	35	24	4				
		8890	-9 304	-30 36	12	1						8899	+53	313	+20	55	145	1				
		8890	-4 309	-30 35	12	1						8899	+59	319	+20	60	194	2				
		8890	+2 315	-30 35	170	6						8890	+54	314	-29	61	24	5				
		8899	+3 316	+21 15	339	5						8898	+55	315	+12	55	73	9				
		8898	+4 317	+12 7	218	12						8898	+62	322	+12	62	242	1				
		8893	+20 333	+11 21	145	9						8894	+72	332	+17	72	24	1				
		8893	+28 341	+9 29	291	11						8894	+86	346	+17	86	242	1				
		8894	+32 345	+17 34	291	1						8905	+80	340	-16	81	73	4				
		8891	+50 12	-26 63	388	8						8893	+85	345	+9							

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1947—Continued

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR OCTOBER 1947—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate quality	Observatory	Date	Eastern standard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate quality	Observatory	
			Difference in longitude	Longitude	Latitude	Distance from center of disk								Difference in longitude	Longitude	Latitude	Distance from center of disk					
Oct. 29	10 34	8909	0	180	-9	69	436	1	P	U. S. Naval.	Oct. 31	10 56	8897	0	270	-3	50	194	9	VG	Mt. Wilson.	
		8908	-57	191	+10	58	242	2					8896	+55	276	-17	59	61	1			
		8907	-22	226	-15	29	109	3					8896	+74	295	-16	76	194	2			
		8903	-11	237	-18	25	97	1														
		8901	0	248	-11	16	194	1														
		8910	+1	249	+20	15	24	6														
		8897	+22	270	-2	23	206	2														
		8896	+29	277	-16	36	73	1														
		8896	+41	289	-17	46	24	6														
		8896	+47	295	-16	52	145	10														
		(*)	+31	279	-11	35	12	3														
		8899	+65	313	+20	66	97	1														
		8899	+71	319	+19	71	194	1														
		8898	+74	322	+12	74	206	1														
		(11)		(248)	(+5)		2,059	39														
30	10 27	8909	-55	179	-8	57	291	1	F	Do.												
		8908	-43	191	+19	45	145	2														
		(*)	-14	220	+10	15	12	1														
		8907	-9	225	-16	22	73	1														
		8903	+2	236	-19	25	97	1														
		8901	+13	247	-11	21	194	1														
		8910	+15	249	+19	22	48	1														
		8897	+35	269	-2	36	145	2														
		8896	+42	276	-18	48	73	1														
		8896	+45	279	-12	48	6	1														
		8896	+60	294	-13	62	170	4														
		8899	+81	315	+18	51	194	2														
		8896	+87	321	+12	87	194	1														
		(11)		(234)	(+5)		1,642	19														
31	10 56	(*)	-75	146	+27	77	12	1	VG	Mt. Wilson.												
		8909	-47	174	-9	50	48	21														
		8909	-40	181	-9	45	456	7														
		8908	-29	192	+19	32	218	10														
		(*)	-22	199	+11	23	12	12														
		(*)	0	221	+13	9	6	2														
		8907	+5	226	-16	21	85	1														
		(*)	+7	228	+10	10	12	6														
		8903	+16	237	-18	28	73	1														
		8901	+26	247	-10	30	194	1														
		8910	+28	249	+19	31	73	21														

Mean daily area for 31 days = 2,517.
 Mean 10 g+s for 31 days = 201.6.
 *Not numbered.
 VG=very good; G=good; F=fair; P=poor.

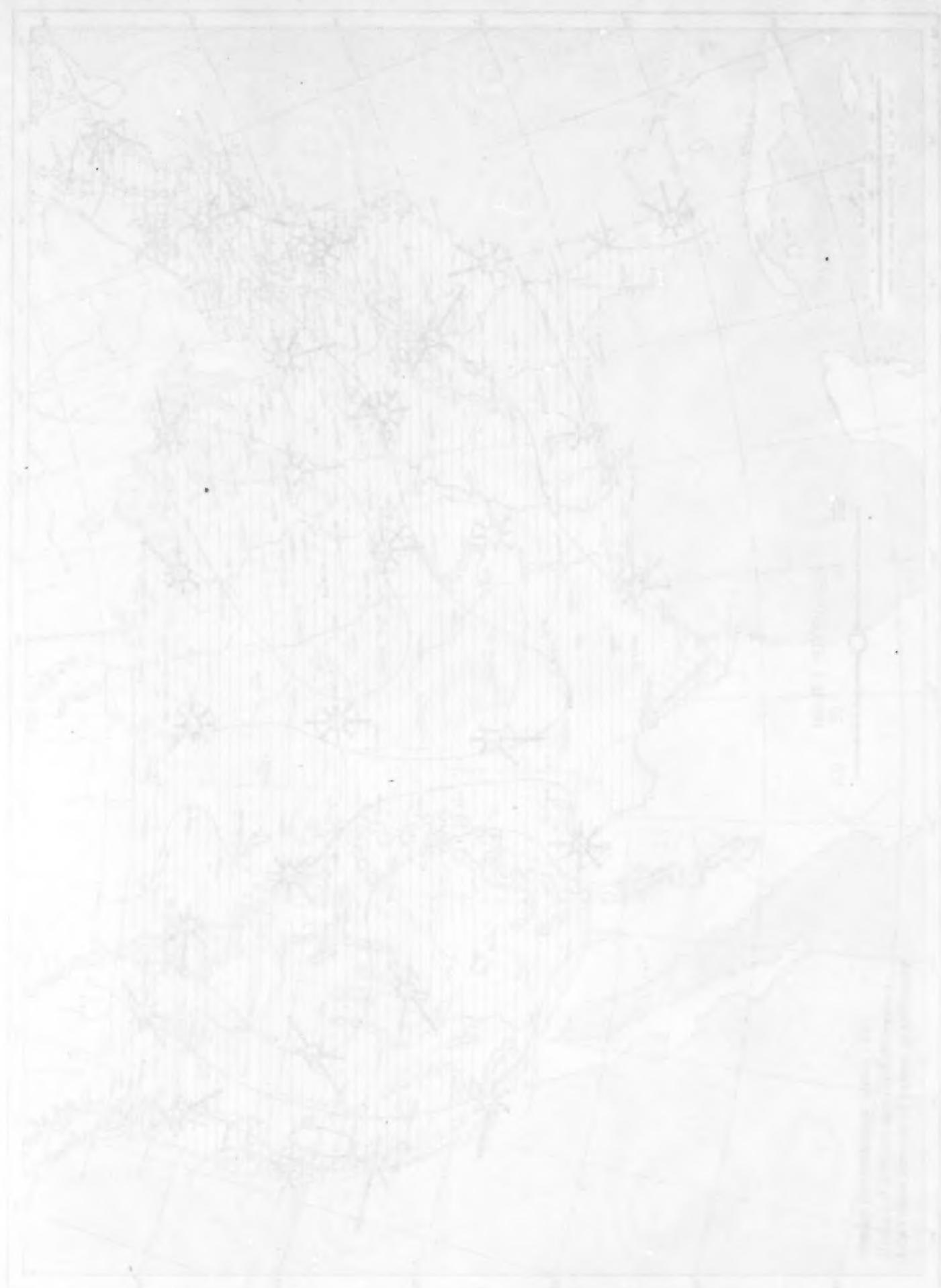
PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR OCTOBER 1947

[Dependent on observations at Zurich Observatory and its stations at Locarno and Arosa.]

October 1947	Relative numbers	October 1947	Relative numbers	October 1947	Relative numbers
1	235	11	132	21	149
2	242	12	125	22	170
3	273	13	93	23	191
4	304	14	111	24	228
5	262	15	129	25	237
6	275	16	112	26	239
7	227	17	121	27	204
8	235	18	136	28	182
9	222	19	147	29	129
10	160	20	129	30	120
				31	111

Mean, 31 days = 181

October 1947. 11. 9. 11.



1947. 11. 9. 11. 1947

Chart I. Departure ($^{\circ}\text{F.}$) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, October 1947

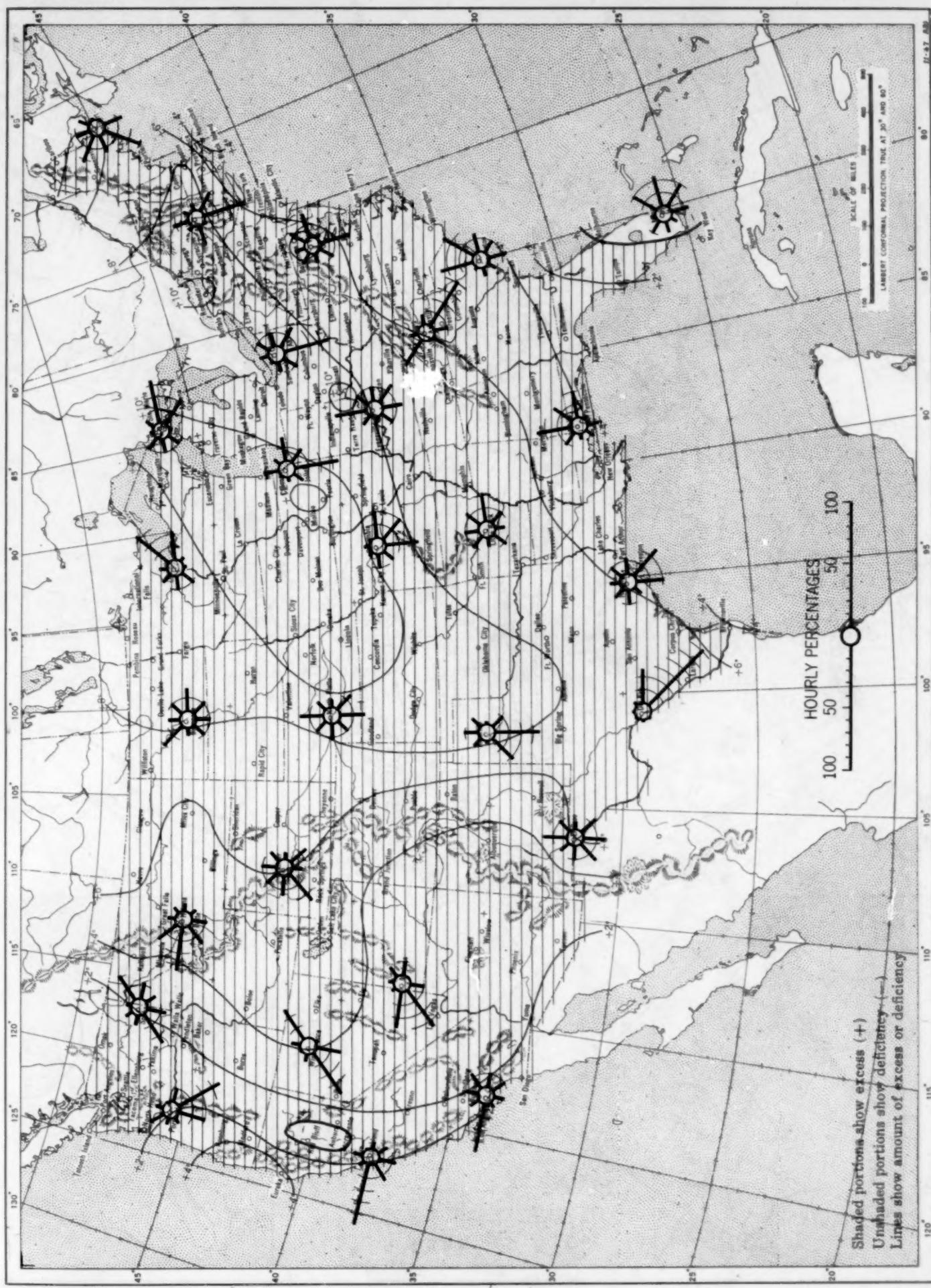
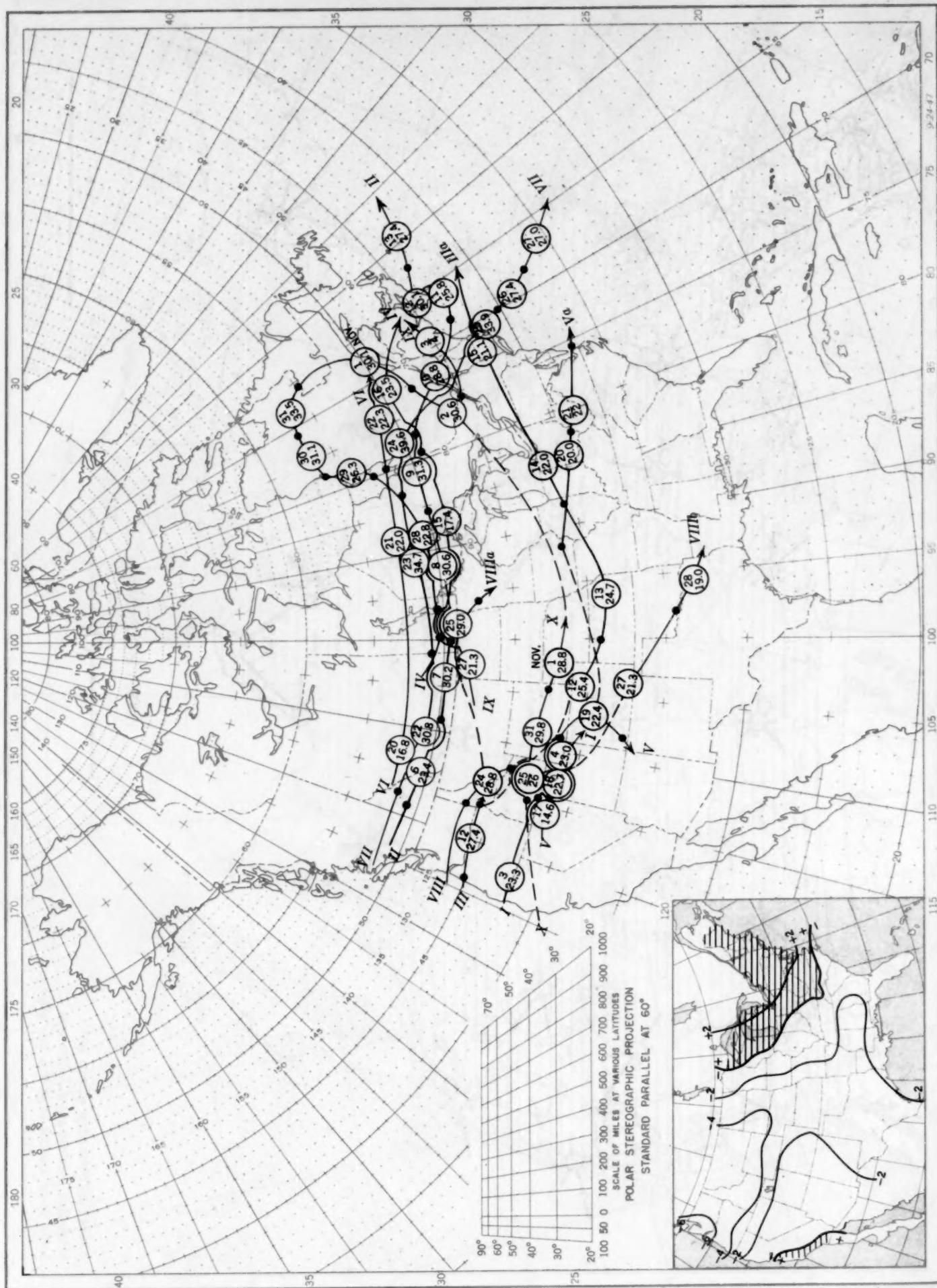


FIG. 1. (Inset) August Departure of Monthly Mean Pressure from Normal
Tracks of Centers of Anticyclones, October 1947.



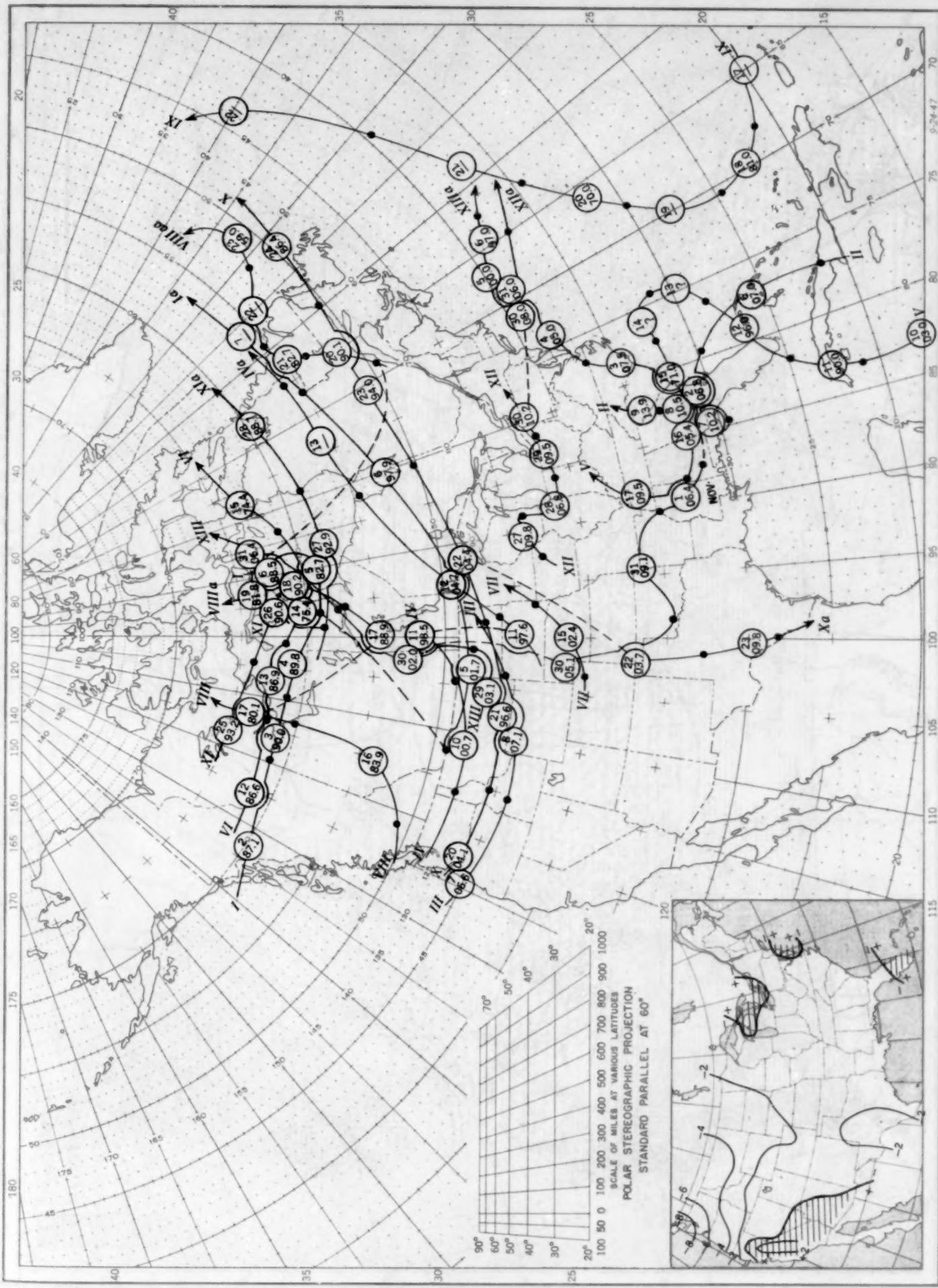
Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (76th meridian time)

Chart III. Tracks of Centers of Cyclones October 1947. (Inset) Change in Mean Pressure from Proceeding Month

Chart III. Tracks of Centers of Cyclones, October 1947. (Inset) Change in Mean Pressure from Preceding Month.

October 1947. M. W. R.

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Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (76th meridian time)

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, October 1947

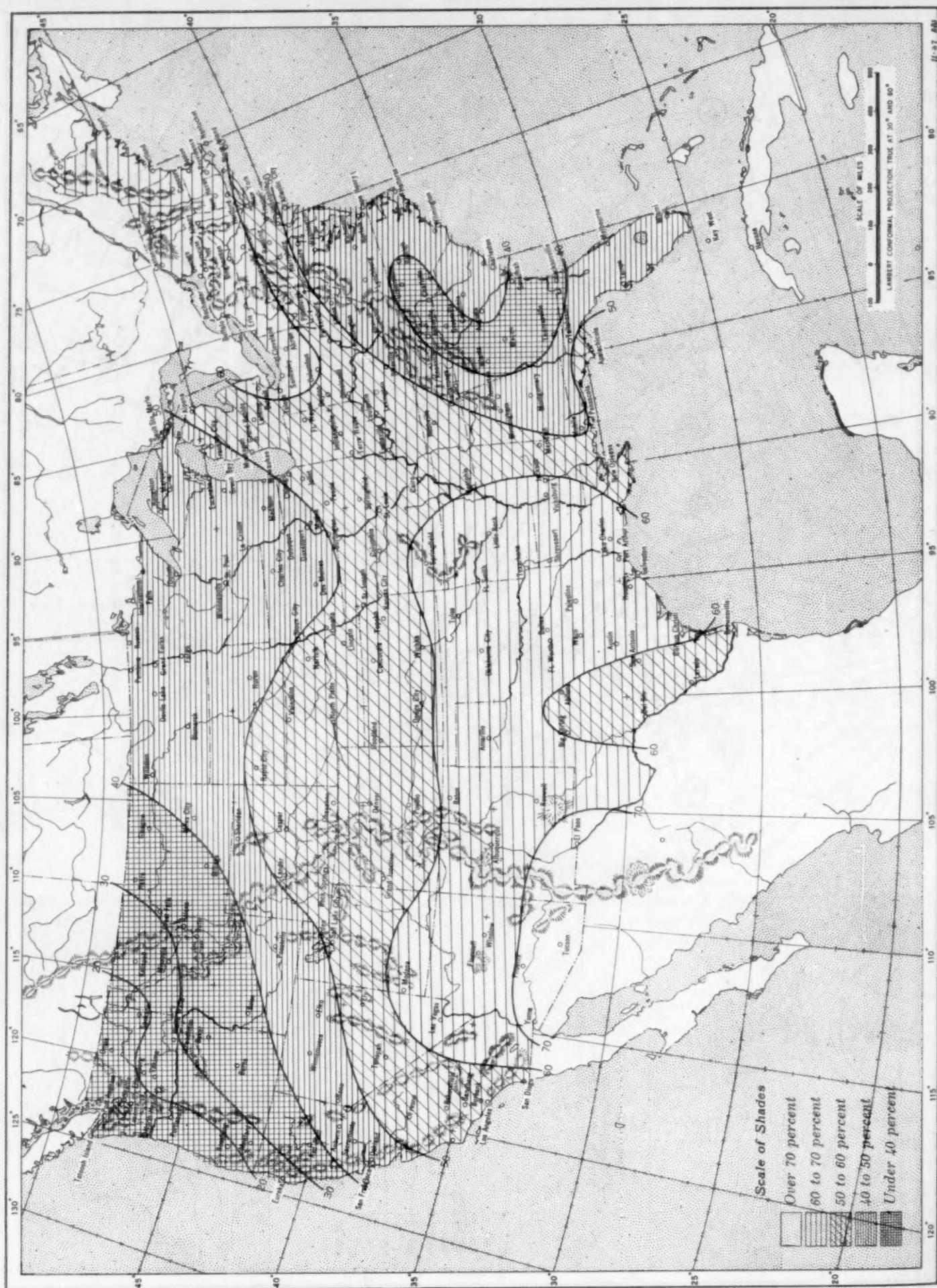


Chart V. Total Precipitation, Inches, October 1947. (Inset) Departure of Precipitation from Normal

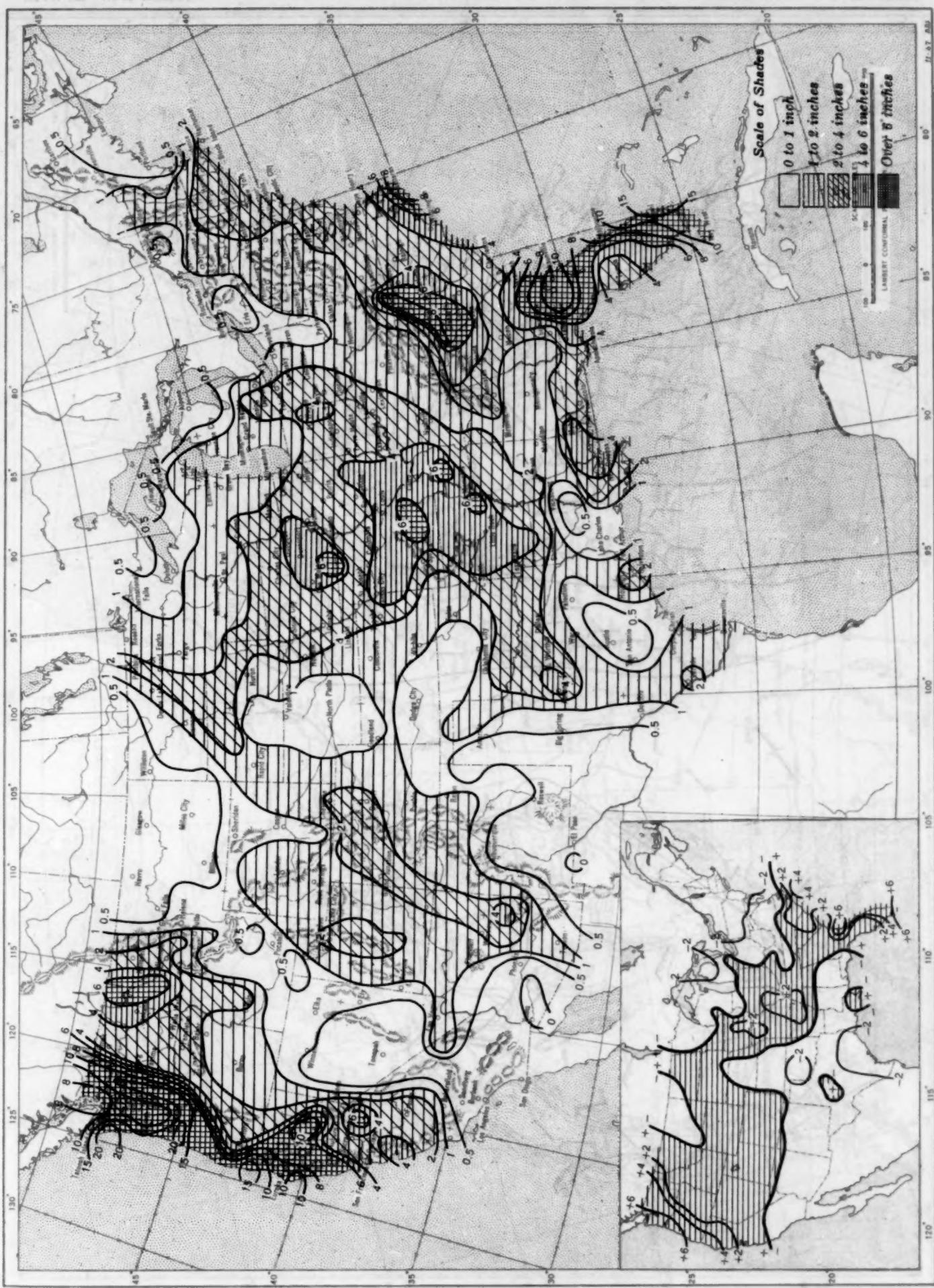


Chart VI. Isobars (mb.), at Sea Level and Isotherms (°F.) at Surface; Prevailing Winds, October 1947

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October 1947. M. W. R.

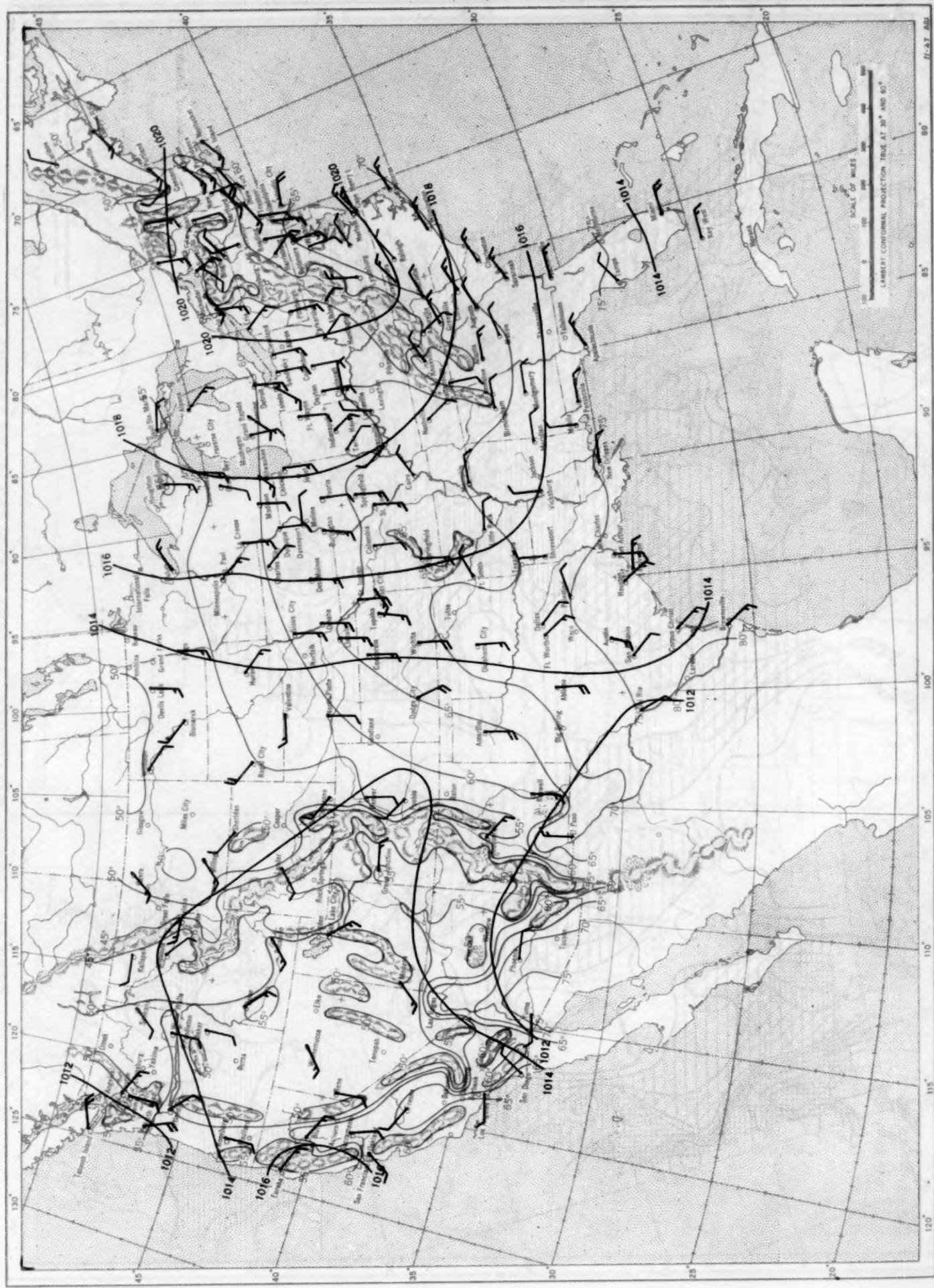
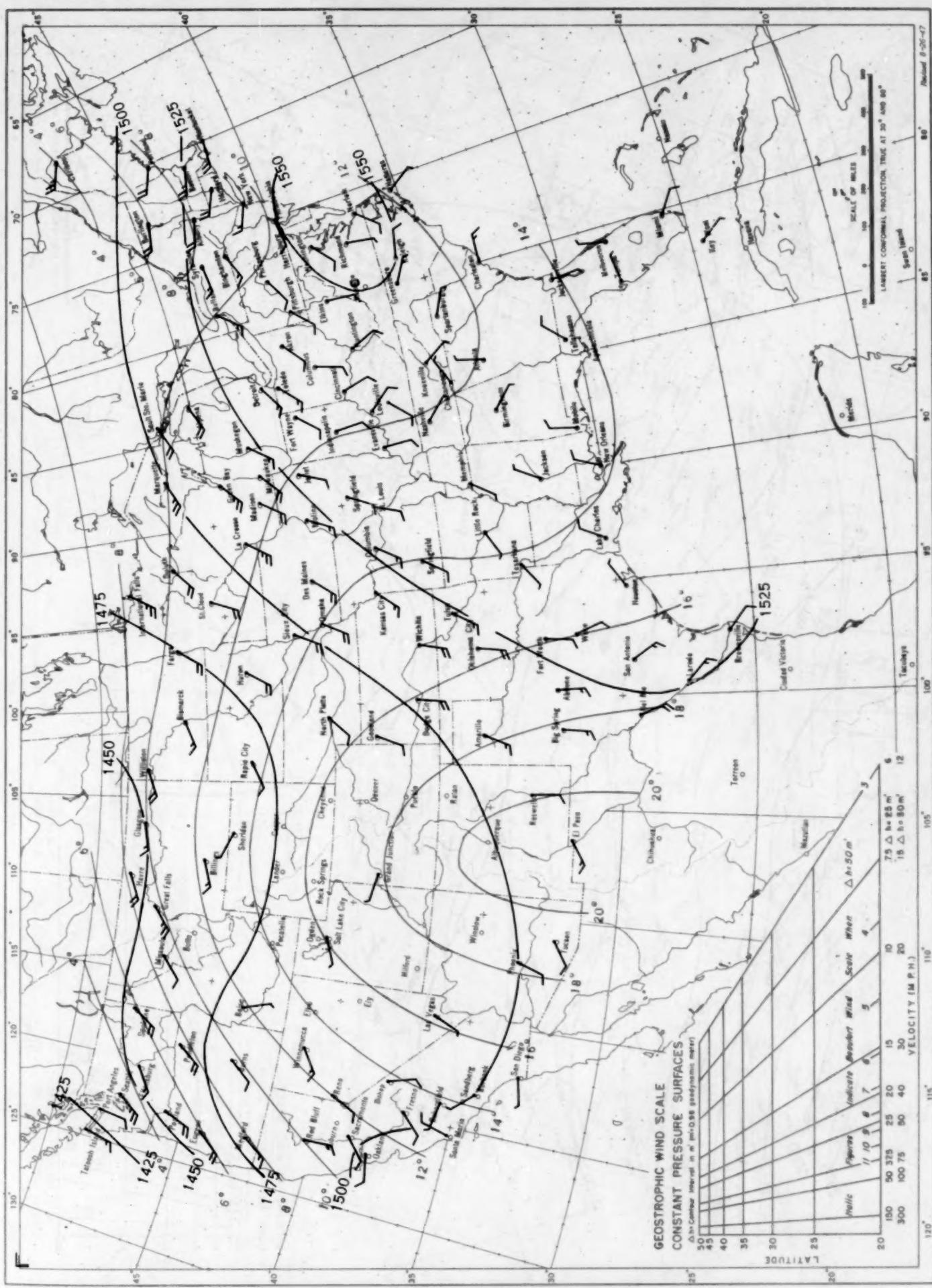


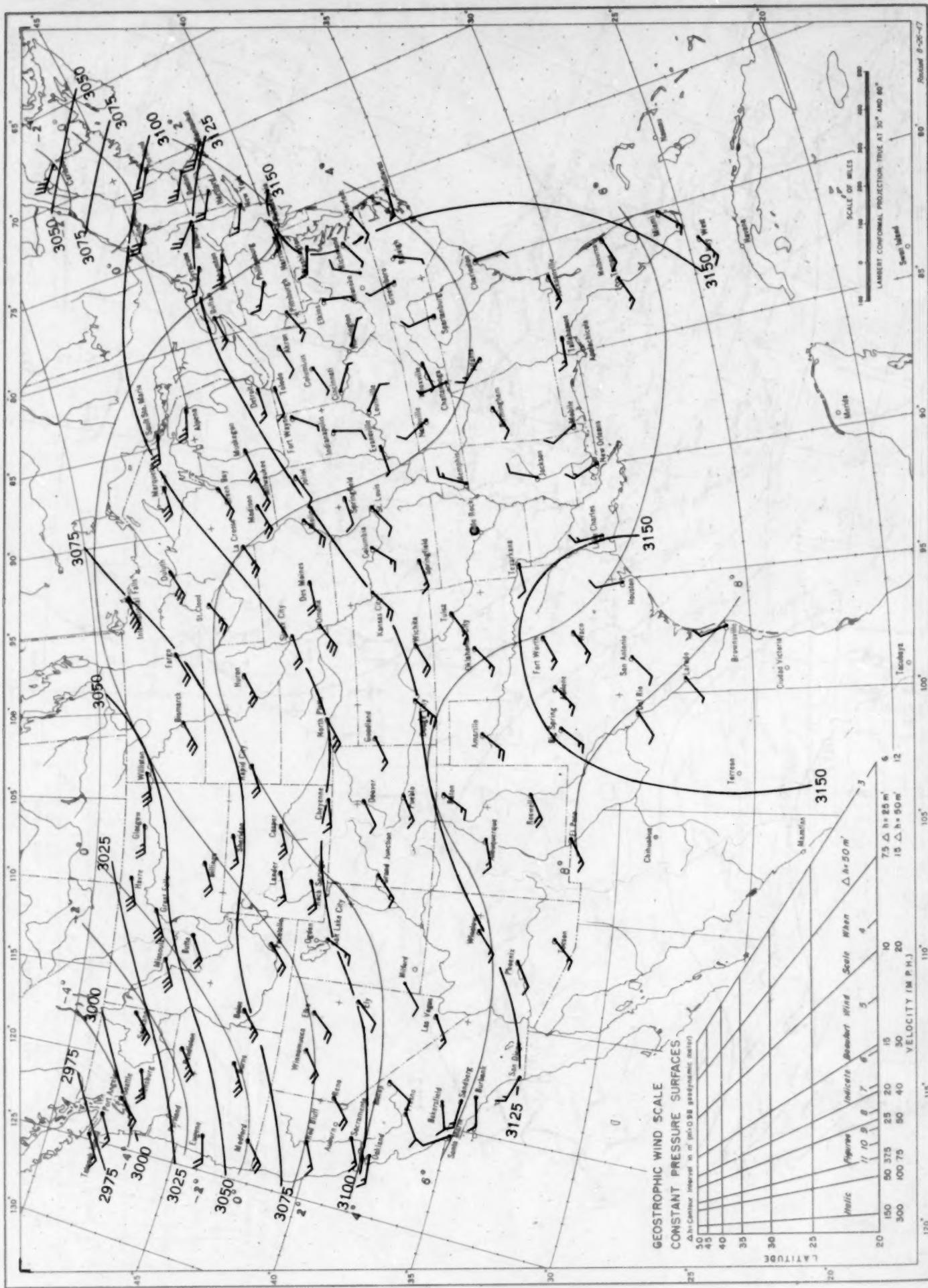
Chart VIII, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 950-millibar Pressure Surface and Prevailing Wind at 1500 Meters (—) and Isotherms in Degrees Centigrade (—) Determined from the 1947 Observations.

Chart VIII, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 850-millibar Pressure Surface, and Resultant Winds at 1,500 Meters (m.s.l.)



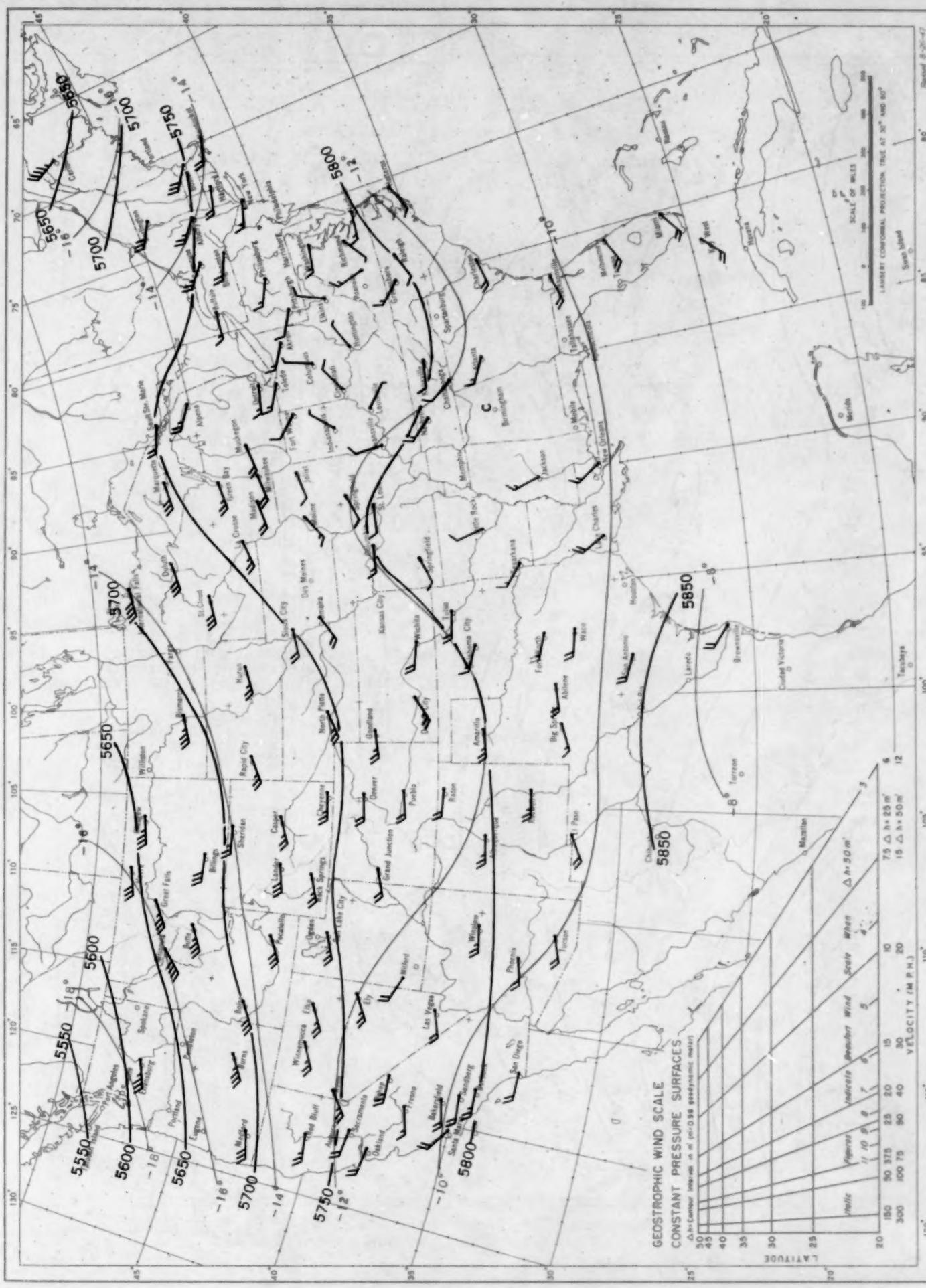
Contour lines and isotherms based on radioonde observations at 0900 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart IX, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 700-millibar Pressure Surface, and Resultant Winds at 3,000 Meters (m.s.l.)



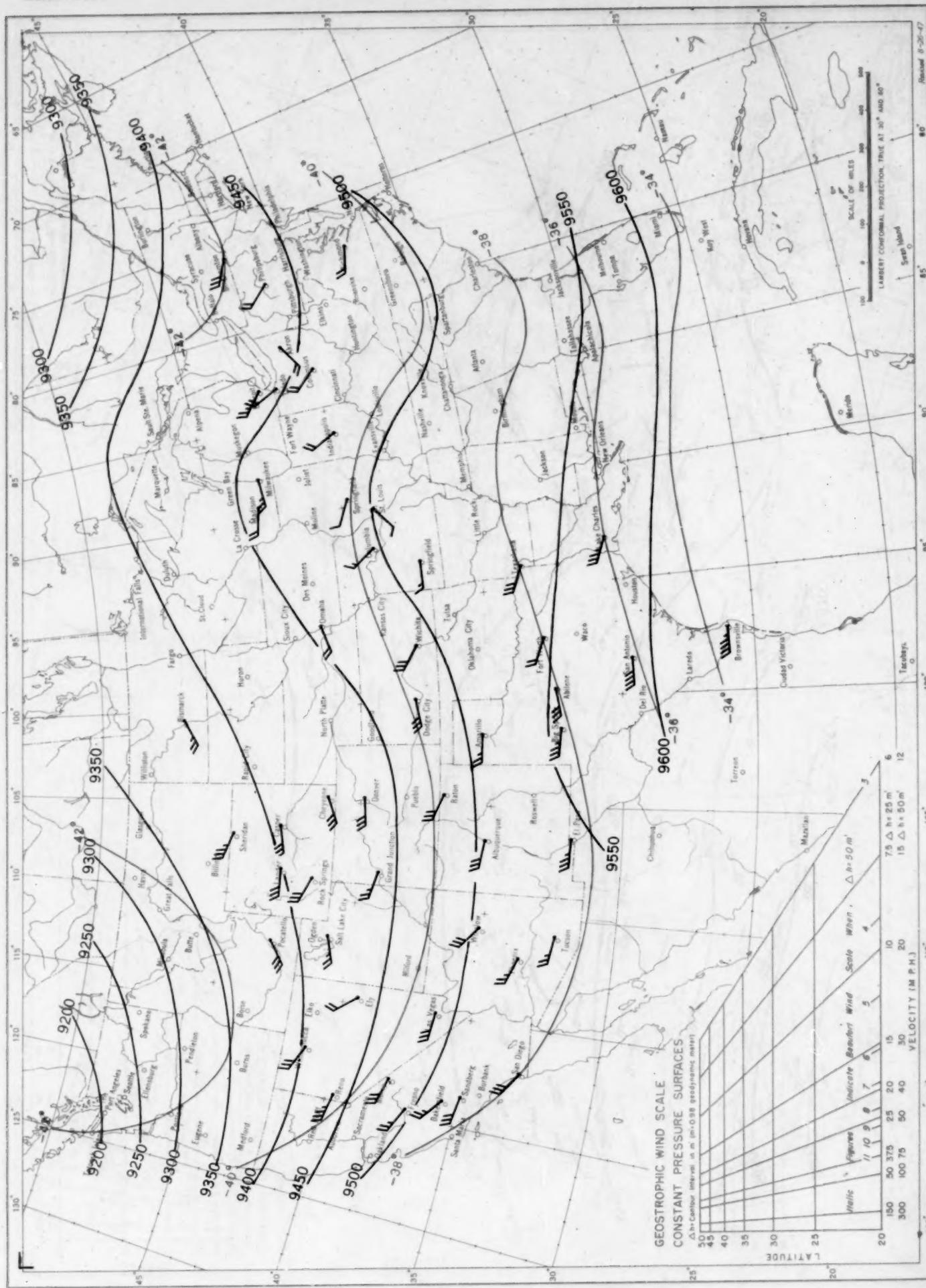
Contour lines and isotherms based on radiosonde observations at 08300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart X, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 500-millibar Pressure Surface, and Resultant Winds at 5,000 Meters (m.s.).



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart XI, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 300-millibar Pressure Surface, and Resultant Winds at 10,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0800 G.C.T. and winds based on pilot balloon observations at 2200 G.C.T.